Curriculum Vitae of Dr Richard Matthews

Dr Richard Matthews

PhD, GDipBA, BE(Hons)

Location: Adelaide, Australia

Dr Richard Matthews is an expert in digital forensics with specialised knowledge derived from extensive training, study, and experience. He holds a PhD in digital forensics from the University of Adelaide, where he focused on sensor pattern noise in image sensors, and has developed innovative tools for forensic intelligence workflows, including systems that assist in CSAM investigations by matching individuals across videos using voice and facial attributes. His work encompasses research into 3D imaging applications in forensics, responsible disclosure of security vulnerabilities in digital platforms, and contributions through peer-reviewed publications and presentations to international expert groups.
Dr Matthews serves as an expert witness, has taught and supervised students in digital forensics, and actively participates in professional bodies, demonstrating his specialised expertise in the field. He is currently the founder of RHEM Labs Pty Ltd where he continues to develop generative AI tools with the support of leading echnology companies Microsoft and Google and continues to serve the community by providing forensic investigation services as and when required.

Education

Doctor of Philosophy

University of Adelaide
Adelaide, Australia
2017 - 2019

Supervisors:

- Dr Matthew Sorell (Primary)
- Associate Professor Nickolas Falkner (Co-Supervisor)

Thesis: Towards a unified theory of sensor pattern noise: An analysis of dark current, lens effects and temperature bias in CMOS image sensors.

Graduate Diploma in Business Administration

University of Adelaide
Adelaide, Australia
2020 - 2023

Electives: Systems Thinking

Bachelor of Engineering with Honours (Electrical and Electronic)

University of Adelaide
Adelaide, Australia
2008 - 2015

Electives: Business Management Systems, Systems Engineering, Coding and Cryptography, Telecommunications Systems

Honours Thesis: Generic Systems Engineering Training System

Research Employment

Director

RHEM Labs Pty Ltd
Adelaide, Australia
2023 - Present

As the Founder of RHEM Labs, I lead the development of AI-driven forensic and legal automation solutions, integrating Generative AI, digital forensics, and cloud platforms (Google Cloud & Microsoft Azure) to enhance accessibility and forensic investigations. With a PhD in Digital Forensics and expertise in Responsible AI, my work focuses on advancing AI-powered forensic analysis, streamlining digital disclosure, evidence processing, and expert reporting.

I lead the design and deployment of LoganAI, an AI-powered forensic and legal automation platform that leverages LLMs (Large Language Models), secure cloud computing, and digital forensic methodologies to support expert witnesses, forensic analysts, and legal professionals. These solutions enable automated case analysis, forensic triage, and AI-assisted document generation while ensuring compliance with legal evidentiary standards.

Key contributions include:

- Development of AI-assisted forensic automation techniques to enhance eDiscovery, case assessment, and evidence processing.
- Deployment of secure forensic AI systems on Microsoft Azure and Google Cloud to ensure compliance, scalability, and data security.
- Integration of AI models for forensic analysis and document synthesis to support expert witness preparation.
- Advocacy for Responsible AI in forensic and legal applications, ensuring AI-assisted methods align with ethical and legal frameworks.

Through RHEM Labs, I continue to advance AI and cloud computing applications in forensic science, collaborating with legal professionals, forensic experts, and industry stakeholders to drive innovation in expert testimony preparation and digital investigations.

Publications generated:

- Matthews, R. 2026. Blueprints to Firearms – A Practitioner’s Guide to Investigating Clandestine 3D-Printed Firearm Labs. Australian Journal of Forensic Sciences.
- Matthews, R. 2026. Challenges in Authenticating Synthetic Media: Forensic Insights from 6,000 DALL·E-Generated Images. Australian Journal of Forensic Sciences.
- Matthews, R. 2026. Bits, Bias, and Blackstone: When Machines Testify — Is the Digital Trace Admissible in Court?. Australian Journal of Forensic Sciences.

Sole Trader

RHEM Labs
Adelaide, Australia
2017 - 2023

RHEM Labs commenced operations as a sole trader business handling forensic operations and teaching services tertiary level courses in Dr Matthews areas of expertise. In 2023, as part of joining the competitive Microsoft for Startups Accelerator program the sole trader business was closed and the forensic services were amalgamated as a division of RHEM Labs Pty Ltd.

Publications generated:

Postdoctoral Research Fellow

University of Adelaide
Adelaide, Australia
2023 - 2023

Working with Associate Professor Russell Brewer, I was responsible for the development of a novel system which assisted in victim identification for CSAM investigations. This research seeks to improve current investigative practices via the development of a novel automated software infrastructure that leverages the voice and facial attributes of subjects to match victims and offenders across CSAM videos. This research is funded by the Department of Home Affairs through the Australian Institute of Criminology and has industry partnerships with Oracle and South Australian law enforcement.

Publications generated:

Researcher in Digital Forensics (Casual)

University of Adelaide
Adelaide, Australia
2020 - 2022

Working with Dr Matthew Sorell, I explored the forensic applications of 3D imaging methods. During this time, I developed a novel framework to test the accuracy, precision, and performance of commercial off-the-shelf technologies involved in 3D imaging. This pipeline visualization was presented to the Forensic Capability Network's 3D Experts Group, Research Festival, and the INTERPOL Digital Forensic Experts Group.

I also explored the impacts of Snapchat as a source of open-source intelligence. Through this research, a fatal error in the Snapchat platform was discovered which resulted in a significant security issue. This issue could lead to the identification of individual users and the subsequent ability to track them via their postings onto the Snapchat platform. It was responsibly and ethically disclosed to Snap Inc. and awarded a bug bounty as well as researcher thanks.

Publications generated:

- Matthews, R. H., & Sorell, M. 2021. Forensic Applications of 3D Sampling. INTERPOL Digital Forensic Experts Group 2021.
- Matthews, R. H., & Sorell, M. 2021. Forensic Applications of 3D Scanning. FCN Science Fest 2021. Available: https://www.fcn.police.uk/publications/session-8-dr-richard-matthews
- Matthews, R. H., Lovell, K., & Sorell, M. 2021. Ghost Protocol – Snapchat as a method of surveillance. Forensic Science International - Digital Investigation. 36 (April 2021), DOI: 10.1016/j.fsidi.2021.301112
- Snap Scraper. 31 May 2020. https://rhematt.github.io/Snap-Scraper/
- Matthews, R. 2020. CreatorID leaked from public content posted to SnapMaps. HackerOne. Available: https://hackerone.com/reports/867521. USD 1,000.
- Matthews, R. H. 2020. OSINT #SnapChatStupidity. CSRB. Adelaide. Available by request.
- Matthews, R. H. 2020. OSINT #AustralianBurning. CSRB. Adelaide. Available by request.

Postdoctoral Research Fellow in Cyber Intelligence

RHEM Labs
Adelaide, Australia
2020 - 2021

Working as a subcontractor for the NATO Cooperative Cyber Defence Centre of Excellence, this research position would normally have been undertaken as a postdoctoral research position based at the center. However, due to travel restrictions imposed by the global COVID-19 pandemic, the research was undertaken as a subcontractor in my home nation. Through this collaboration, I developed a framework to assess the relevant technological risk posed by generative adversarial networks to an emerging intelligence field known as cyber intelligence. In this work, we assisted in defining what cyber intelligence is, investigated

different applications of generative adversarial networks within the cyber intelligence domain, and determined the framework to assess them. The work was published in the CCDCOE's internal library.

Publications generated:

- Biondi, F., Buonocore, G., & Matthews, R. 2021. Generative Adversarial Networks from a Cyber Intelligence perspective. Library of The NATO Cooperative Cyber Defence Centre of Excellence. Available: https://ccdcoe.org/library/publications/generative-adversarial-networks-from-a-cyber-intelligence-perspective/

Postdoctoral Researcher in Cybersecurity

University of Adelaide
Adelaide, Australia
2019 - 2020

Reporting to Dr Matthew Sorell and Dr Braden Philips, I was responsible for conducting an independent study on the cybersecurity of small form satellites as used in a military context. This position was supported by a grant from the Defence Science and Technology Group. Further details available upon request.

Publications generated:

- Matthews, R. H., Phillips, B., & Sorell, M. 2019. How security ready is the Australian Space Industry? The challenges of digital security in space. ASRC19. Adelaide 2019. Available: http://www.nssa.com.au/19asrc/resources/19ASRC_Program_Abstracts.pdf.

- Matthews, R., Phillips, B., and Sorell, M. 2019. Space Cyber: Understanding Cyber Vulnerabilities of Small Form Factor Satellites. The University of Adelaide. Adelaide 2019.

Technical Skills

Lab Skills

- Digital Forensics & Incident Response
- AI Model Development & LLM Fine-Tuning
- Cloud Infrastructure Deployment (Azure & Google Cloud)
- High-Performance Computing (HPC)
- AI Ethics & Responsible AI Implementation
- Cybersecurity & Threat Intelligence
- OSINT (Open Source Intelligence)
- Digital Image & Sensor Pattern Noise Analysis
- Forensic Data Processing & Chain of Custody
- Expert Witness Testimony & Report Writing
- Generative AI & AI-assisted Legal Automation
- DevOps & Infrastructure Automation
- Embedded Systems & Edge AI
- PCB Soldering
- 3D Modelling
- 3D Printing and Manufacturing
- Systems Engineering & Architecture Design

Computer Languages and Software Tools

- Python 3.0
- Matlab
- JavaScript
- Java
- C++
- HTML
- Markdown
- Fusion360
- Bash & Shell Scripting
- PowerShell
- Docker & Kubernetes
- SQL & NoSQL Databases
- React.js
- Azure Functions & Serverless Computing
- Google Cloud Platform (GCP)
- Microsoft Azure
- AI/ML Frameworks (TensorFlow, PyTorch, OpenAI API)
- LaTeX
- Git & Version Control
- OpenCV & Image Processing
- API Development & Integration

Awards and Prizes

- 2025: Google Security Researcher Thanks - Awarded to those who discover security-related issues with the Google platform and engage in responsible and ethical disclosure.
- 2023: XVideos Security Researcher Thanks - Awarded to those who discover security-related issues with the Xvideos platform and engage in responsible and ethical disclosure.
- 2020: Netflix Security Researcher Hall of Fame Inductee - Awarded to those who discover security-related issues with the Netflix platform and engage in responsible and ethical disclosure.
- 2020: Snapchat Security Researcher Thanks - Awarded to those who discover security-related issues with the Snapchat platform and engage in responsible and ethical disclosure.
- 2019: Excellence in Teaching - Engineering, Computer and Mathematical Sciences Faculty Teaching Award.
- 2019: Adelaide MBA Community Achievement Scholarship
- 2018: Second Place South Australia, Missing Persons Hackathon - Team Leader.
- 2018: Semi-Finalist Channel 7 Young Achiever of the Year - University of Adelaide STEM Award.
- 2018: First Place Exercise Neptune - International Maritime Cyber Security Event, Tallinn Estonia. Team Leader.
- 2018: Simon Rockcliff Travel Award for Research Supervision and Mentorship
- 2017: First Place International Open Source Intelligence Cyber Security Event - Tallinn, Estonia.

Research Motivation

My research interests are primarily focused in the discipline of the Forensic Sciences. My current focus is towards forensic validation generally, digital and media forensics specifically, and the nature of science philosophically. I have strong interests in all types of media including visual and audio and apply this to current and emerging issues within cybersecurity, intelligence, and forensic science.

During my MBA at the University of Adelaide, I was introduced to the concept of ensuring our skills were employed solving the right problems faced within our modern world. Pedophilia, human trafficking, and abuse inflicted against children are some of the most abhorrent crimes known to our modern society. The technological revolution that was ushered

in with the internet disrupted all industries, including our ability to combat these vile crimes. In my work, I continue building towards systems that will automatically detect, filter, and disrupt online abuse in all its forms.

My take on this work is unique due to the integration of systems thinking. I ensure my tools are built with the forensic process in mind, ensuring that not only is abhorrent media eliminated from our networks, but evidence of the crime is preserved leading to successful prosecution. However, breaking a single link is not enough. To completely eradicate the problem of online abuse and human trafficking, measures need to be taken to disrupt the system at all possible intervention points. On one hand, my work focuses on the detection, moderation, classification, and storage of online abuse material. On another, it studies the methods of analysis, categorization, linkage, and provenance of online abuse and surveillance material. Through the integration of systems thinking, these tools create leverage to disrupt at the critical point of dissemination and creation. Such disruption leads to a greater ability in locating those who are victims of these crimes.

I acknowledge that my own work is not enough to solve the issues recognized by the systems-level analysis of the problem. Recognizing the limitations technology has, through international and interdisciplinary collaborations, the human, psychological, and criminological elements of these challenges become clear leading to victim-centric reforms, educational programs, and cultural changes to eliminate the socioeconomic factors leading to environments which cater to online abuse.

Publications

Last updated: 2026-01-20

To see my publication activity including citations as a graph please click here.

Journals

- Matthews, R.. 2026. "*Blueprints to Firearms – A Practitioner's Guide to Investigating Clandestine 3D-Printed Firearm Labs*". **Australian Journal of Forensic Sciences**.
- Matthews, R.. 2026. "*Challenges in Authenticating Synthetic Media: Forensic Insights from 6,000 DALL·E-Generated Images*". **Australian Journal of Forensic Sciences**.
- Matthews, R.. 2026. "*Bits, Bias, and Blackstone: When Machines Testify — Is the Digital Trace Admissible in Court?*". **Australian Journal of Forensic Sciences**.
- Matthews, R. H., Falkner, N., Sorell, M.. 2021. "*Determining Image Sensor Temperature Using Dark Current*". **Australian Journal of Forensic Sciences**. DOI: 10.1080/00450618.2021.1892186.
- Matthews, R. H., Lovell, K., Sorell, M.. 2021. "*Ghost Protocol – Snapchat as a method of surveillance*". **Forensic Science International - Digital Investigation**. Vol. 36, April, DOI: 10.1016/j.fsidi.2021.301112.
- Matthews, R., Sorell, M., Falkner, N.. 2020. "*Reverse Engineering the Raspberry Pi Camera V2: A study of Pixel Non-Uniformity using a Scanning Electron Microscope*". **Digital Investigation**. Vol. 32, pp. 200900, March, DOI: 10.1016/j.fsidi.2019.200900.
- Matthews, R., Sorell, M., Falkner, N.. 2019. "*An analysis of optical contributions to a photo-sensor's ballistic fingerprints*". **Digital Investigation**. Vol. 28, pp. 139-145, March, DOI: 10.1016/j.diin.2019.02.002.
- Matthews, R., Sorell, M., Falkner, N.. 2019. "*Isolating lens effects from source camera identification using sensor pattern noise*". **Australian Journal of Forensic Sciences**. Vol. 51(Sup 1), pp. S132-S135, DOI: 10.1080/00450618.2021.1892186.

Technical and Policy Reports

- Matthews, R.. 2023. "*Submission*". Royal Commission into Defence and Veteran Suicide. Australia, Available: Available by request.
- Matthews, R.. 2022. "*Submission*". Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability. Australia, Available: Available by request.
- Matthews, R.. 2017. "*Suicide by Veterans and Ex-Service personnel*". Senate Standing Committee on Foreign Affairs, Defence and Trade. Australia, Available: Available by request.
- Biondi, F., Buonocore, G., Matthews, R.. 2021. "*Generative Adversarial Networks from a Cyber Intelligence perspective*". Library of The NATO Cooperative Cyber Defence Centre of Excellence. Available: https://ccdcoe.org/library/publications/generative-adversarial-networks-from-a-cyber-intelligence-perspective/.
- Matthews, R., Phillips, B., Sorell, M.. 2019. "*Space Cyber: Understanding Cyber Vulnerabilities of Small Form Factor Satellites*". The University of Adelaide. Adelaide, Available: .
- Matthews, R.. 2017. "*OSINT- SNAFU Facebook Page: A preliminary report prepared for The Hon. Dan Tehan MP Minister Assisting the Prime Minister for Cyber Security*". . Adelaide, Available: .
- Matthews, R.. 2017. "*The Byethorne Duck - An Image Provenance Investigation Technical Report*". The University of Adelaide. Adelaide, Available: .

Popular Sources

- Guest, A.. (2022). "DNA failures prompt calls for forensic regulator". ABC Brisbane. (Available Online). Available: https://www.abc.net.au/radio/programs/pm/dna-failures-prompt-calls-for-forensic-regulator-/101463930.
- 9News Staff Writer. (2022). "Senior Queensland forensics staff stood down over DNA testing scandal". 9News. (Available Online). Available: https://www.9news.com.au/national/queensland-senior-forensics-staff-stood-down-criminal-cases-being-reviewed/b1440e06-b04e-47bf-be60-7a89bb27205a.
- Holmes, D.. (2022). "Molecular biologist to implement QLD forensic inquiry recommendations". The Mandarin. (Available Online). Available: https://www.themandarin.com.au/200693-molecular-biologist-to-implement-qld-forensic-inquiry-recommendations/.
- Australian Associated Press. (2022). "Qld forensic staff stood down amid inquiry". Yahoo News. (Available Online). Available: https://au.news.yahoo.com/qld-forensic-staff-stood-down-015719816.html.
- Molloy, S.. (2020). "'Modern warfare has changed': Cyber attack threat rising in Australia". News.com.au. (Interview). Available: https://www.news.com.au/technology/online/security/modern-warfare-has-changed-cyber-attack-threat-rising-in-australia/news-story/2e642eba95c2e9f22dce801536cf6534.
- Matthews, R.. (2019). "Space can solve our looming resource crisis – but the space industry itself must be sustainable". The Conversation. . Available: https://theconversation.com/space-can-solve-our-looming-resource-crisis-but-the-space-industry-itself-must-be-sustainable-124576.
- Matthews, R.. (2019). "Your car is more likely to be hacked by your mechanic than a terrorist". The Conversation. . Available: https://theconversation.com/your-car-is-more-likely-to-be-hacked-by-your-mechanic-than-a-terrorist-111616.
- Matthews, R. and Lovell, K.. (2019). "Don't click that link! how criminals access your digital devices and what happens when they do". The Conversation. . Available: https://theconversation.com/dont-click-that-link-how-criminals-access-your-digital-devices-and-what-happens-when-they-do-109802.
- Vanstone, A.. (2019). "How to protect against cyber threats". ABC Counterpoint. (Interview). Available: https://www.abc.net.au/radionational/programs/counterpoint/how-to-protect-against-cyber-threats/10834624.
- Matthews, R.. (2018). "US citizens can now publish models of 3D printed firearms online. What does it mean for us?". The Conversation. . Available: https://theconversation.com/us-citizens-can-now-publish-models-of-3d-printed-firearms-online-what-does-it-mean-for-us-99851.
- Matthews, R. and Falkner, N.. (2018). "How suppliers of everyday devices make you vulnerable to cyber attack and what to do about it". The Conversation. . Available: https://theconversation.com/how-suppliers-of-everyday-devices-make-you-vulnerable-to-cyber-attack-and-what-to-do-about-it-98254.
- Matthews, R.. (2018). "How silent signals from your phone could be recording and tracking you". The Conversation. . Available: https://theconversation.com/how-silent-signals-from-your-phone-could-be-recording-and-tracking-you-94978.
- Matthews, R.. (2018). "Proposed new regulations for 3D printed medical devices must go further". The Conversation. . Available: https://theconversation.com/proposed-new-regulations-for-3d-printed-medical-devices-must-go-further-90314.
- Vanstone, A.. (2018). "3D printed guns". ABC Counterpoint. (Interview). Available: https://www.abc.net.au/radionational/programs/counterpoint/3d-guns/10247774.
- Royce, K.. (2018). "3D-printed weapons and the law". The Saturday Paper. (Interview). Available: https://www.thesaturdaypaper.com.au/news/law-crime/2018/08/11/3d-printed-weapons-and-the-law/15339096006685.
- Cooper, L.. (2018). "3D-printed guns in Australia: Everything you need to know". Channel 9. (Interview). Available: https://www.9news.com.au/national/3d-printed-guns-australia-everything-you-need-to-know-laws-safety-danger-access/4520a96e-3100-4937-87fe-5fc4a9aace63.
- McKinnon, A.. (2018). "Science and technology - Cyber security". Radio Adelaide, Rich and Real. (Interview).
- Randall, A. and Lane, S.. (2018). "Concerns over what mobile phone microphones are recording - and why". ABC AM with Sabra Lane. (Interview). Available: https://www.abc.net.au/radio/programs/am/concerns-over-what-mobile-phone-microphones-are-recording/9754522.

- Long, T.. (2018). "3D printing your medicine?". Talking Lifestyle. (Interview).
- Smith, B.. (2018). "Fake news, hoax images: How to spot a digitally altered photo from the real deal". ABC News. (Interview). Available: https://www.abc.net.au/news/science/2018-02-11/fake-news-hoax-images-digitally-altered-photos-photoshop/9405776.
- Bogle, A.. (2018). "Image ballistics: Your smartphone camera reveals more than you think". ABC News. (Interview). Available: https://www.abc.net.au/news/science/2018-02-07/image-ballistics-your-smartphone-camera-reveals-more-than-think/9397830.
- Matthews, R.. (2017). "Everyone falls for fake emails: lessons from cybersecurity summer school". The Conversation. . Available: https://theconversation.com/everyone-falls-for-fake-emails-lessons-from-cybersecurity-summer-school-81389.
- Matthews, R.. (2017). "Explainer: How law enforcement decodes your photos". The Conversation. . Available: https://theconversation.com/explainer-how-law-enforcement-decodes-your-photos-78828.
- Matthews, R.. (2017). "The legal minefield of 3D printed guns". The Conversation. . Available: https://theconversation.com/the-legal-minefield-of-3d-printed-guns-71878.
- Carrick, D.. (2017). "3D printed guns and regulation". The Law Report. (Interview). Available: https://www.abc.net.au/radionational/programs/lawreport/3d-printed-guns-and-regulation/8388672.
- Smith, J.. (2017). "3D printed gun laws still unclear". 2SER: The Daily. (Interview). Available: https://2ser.com/3d-printed-gun-laws-still-unclear/.
- Grace, L.. (2017). "Fake photos and how forensic digital image provenance can prove they aren't or are real". The Advertiser. (Interview). Available: https://www.adelaidenow.com.au/news/south-australia/fake-photos-and-how-forensic-digital-image-provenance-can-prove-they-arent-or-are-real/news-story/9d2086b6357f681d1144310a94f60ce4.
- Matthews, R.. (2015). "The Playboy centrefold at the centre of computer science". The Conversation. . Available: https://theconversation.com/the-playboy-centrefold-at-the-centre-of-computer-science-41457.

Patents and Open Source Deployments

Snap Scraper

Date: 31 May 2020

Link: https://rhematt.github.io/Snap-Scraper/

SnapScraper is an open-source intelligence tool which enables users to download media uploaded to Snapchat’s Snap Map using a set of latitude and longitude coordinates.

- Developed in Swift in 2020.
- This project led to an honours project for 3 students in 2021 at the University of Adelaide to expand upon the functionality for automatically moderating the content uploaded to social media networks using convolutional networks.
- A decision was made to release this innovation under an MIT license rather than pursue a patent due to the application space for the law enforcement and intelligence community at large.

Funding

Grants

- Matthews, R. . 2025. "Google for Startups: Enhanced Support Grant". Google. AUD 19,330.80.
- Matthews, R. . 2025. "Google for Startups: 2025 GFS Cloud Program Scale Y1". Google. AUD 120,817.50.
- Matthews, R. . 2024. "Google for Startups: 2024 GFS Cloud Program Scale Y1". Google. AUD 161,090.
- Matthews, R. . 2024. "Australia National AI Spriint: LoganAI Semi Final Grant". Google. AUD 37,715.
- Matthews, R. . 2023. "Microsoft for Startups Founders Hub". Microsoft. USD 150,000.
- Matthews, R. . 2020. "Applications of GAN from Cyber Intelligence Perspective". NATO CCDCoE. EUR 1,500.
- Matthews, R., Phillips, B., Sorell, M. . 2019. "Space Cyber Security". Defence Science Technology Group. AUD 48,000 (component funding).
- Matthews, R., Sorell, M. . 2018. "3D Scanning and Forensic Digital Reconstruction Methods". National Institute of Forensic Science Australian and New Zealand Policing Advisory Association. AUD 15,000.
- Matthews, R. . . "Walter Dorothy Duncan Trust". Walter Dorothy Duncan Trust. AUD 1,000.
- Matthews, R. . . "Travel to collaborate with NATO CCDCoE, ENFSI-EKEI and industry partners in Tallinn, Estonia". Simon Rockcliff Grant. AUD 4,000.
- Matthews, R. . 2015-2019. "Australian Postgraduate Award". Australian Government. AUD 98,485.

Bug Bounties

- Matthews, R.. UNDISCLOSED. "UNDISCLOSED". Platform: Google. Amount: UNDISCLOSED. Available: UNDISCLOSED1.
- Matthews, R.. UNDISCLOSED. "UNDISCLOSED". Platform: BugCrowd. Amount: UNDISCLOSED. Available: UNDISCLOSED1.
- Matthews, R.. UNDISCLOSED. "UNDISCLOSED". Platform: HackerOne. Amount: UNDISCLOSED. Available: UNDISCLOSED1.
- Matthews, R.. 2020. "CreatorID leaked from public content posted to SnapMaps". Platform: HackerOne. Amount: USD 1,000. Available: https://hackerone.com/reports/867521.

Conference Proceedings and Abstracts

- Matthews, R. H., Sorell, M.. 2022. "*Dealing with pseudo-science – Introducing the Forensic Acceptance and Readiness Scale*". In DFRWS APAC 2022. Adelaide, Australia.
- Matthews, R. H., Moseley, T., Tanuku, S., Wang, S., Xu, L., Sorell, M.. 2022. "*SnapScraper - Automated Open Source Content Scraping for Snapchat Investigations*". In DFRWS APAC 2022. Adelaide, Australia.
- Matthews, R. H., Sorell, M.. 2021. "*Forensic Applications of 3D Sampling*". In INTERPOL Digital Forensic Experts Group 2021. Online. Available: Available by request.
- Matthews, R. H., Sorell, M.. 2021. "*Forensic Applications of 3D Scanning*". In FCN Science Fest 2021. Online. Available: https://www.fcn.police.uk/publications/session-8-dr-richard-matthews.
- Matthews, R. H., Falkner, N., Sorell, M.. 2021. "*Determining Image Sensor Temperature Using Dark Current*". In DFRWS APAC 2021. Online. Available: https://youtu.be/4B9wB3njbcc.
- Heading, B., Crossing, I., Hilliard, J., Page, L., Sorell, M., Matthews, R.. 2020. "*Techniques for GPS Spoofing Detection on Android Devices*". In ICR2020. Tallinn. Available: https://www.yumpu.com/en/document/read/65133378/proceedings-of-the-6th-interdisciplinary-cyber-research-conference-icr2020.
- Matthews, R. H.. 2020. "*OSINT #SnapChatStupidity*". In CSRB. Adelaide. Available: Available by request.
- Matthews, R. H.. 2020. "*OSINT #AustralianBurning*". In CSRB. Adelaide. Available: Available by request.
- Matthews, R. H.. 2019. "*How safe is the internet? The Adaptive Challenges in Cyber Space*". In TEDx UniSA. Adelaide. Available: https://youtu.be/_JUiP5qZHbY.
- Matthews, R. H., Falkner, N., Sorell, M.. 2019. "*Exploiting dark current for forensic image identification*". In ICR2019. Tallinn. Available: https://haldus.taltech.ee/sites/default/files/2021-04/ICR2019_proceedings.pdf.
- Shelby-James, L., Norman, S., Matthews, R., Sorell, M.. 2019. "*Reliability and trust in global navigation satellite systems*". In ICR2019. Tallinn. Available: https://haldus.taltech.ee/sites/default/files/2021-04/ICR2019_proceedings.pdf.
- Tang, J., Walsh, G., Sorell, M., Matthews, R.. 2019. "*Forensic Applications of 3D Scanning*". In ICR2019. Tallinn. Available: https://haldus.taltech.ee/sites/default/files/2021-04/ICR2019_proceedings.pdf.
- Matthews, R. H., Phillips, B., Sorell, M.. 2019. "*How security ready is the Australian Space Industry? The challenges of digital security in space*". In ASRC19. Adelaide. Available: http://www.nssa.com.au/19asrc/resources/19ASRC_Program_Abstracts.pdf.
- Matthews, R. H.. 2019. "*The real space cowboys: An assessment of Space Exploration Technologies Corp sustainability using the Ben et al. and Perrott Models of corporate sustainability*". In ASRC19. Adelaide. Available: http://www.nssa.com.au/19asrc/resources/19ASRC_Program_Abstracts.pdf.
- Matthews, R., Sorell, M., Falkner, N.. 2018. "*Thermal Effects of Dark Current on Blind Source Camera Identification*". In ICR2018. Tallinn. Available: https://haldus.taltech.ee/sites/default/files/2021-04/ICR2018_proceedings.pdf.
- de Vries, S., Grozinger, F., Williams, B., Sorell, M., Matthews, R.. 2018. "*Penetration Testing of the SpaceTalk Tracking Watch*". In ICR2018. Tallinn. Available: https://haldus.taltech.ee/sites/default/files/2021-04/ICR2018_proceedings.pdf.
- Castignani, G., Shanmuganathan, N., Sharifi, N., Sorell, M., Matthews, R. H.. 2018. "*Security Framework for Children's Safety Watches*". In ICR2018. Tallinn. Available: https://haldus.taltech.ee/sites/default/files/2021-04/ICR2018_proceedings.pdf.
- Jennings, L., Singh, I., Sorell, M., Matthews, R. H., Eggendorfer, T., Hovhannisyan, K.. 2018. "*Improving the technical functionality of children's tracking watches*". In ICR2018. Tallinn. Available: https://haldus.taltech.ee/sites/default/files/2021-04/ICR2018_proceedings.pdf.
- Matthews, R., Sorell, M., Falkner, N.. 2017. "*Isolating Lens Aberrations within Fixed Pattern Noise*". In ICR2017. Tallinn. Available: https://haldus.taltech.ee/sites/default/files/2021-04/ICR2017_proceedings_0.pdf.

Teaching Experience

Academic Appointments

Lecturer (Casual)

University of Adelaide
2021 - 2022

Working under Dr Matthew Sorell, I was responsible for the course coordination and teaching of 60 students completing Design and Innovation. This course looks to teach students further professional practice skills including writing, presentation, and consulting skills needed for job-ready graduates. Assessment includes the use of two essays, a semester-long group project, and an innovative peer assessment which enabled the full participation of all students in group work. This caused the assessment of previous years to change from weighted HD and Ds to Ds and Cs reflecting better practice in line with school expectations. This course was revised to be taught in a blended mode this year due to COVID-19. I was responsible for teaching the online lectures and workshops while the teaching load was shared with a fellow member of the teaching staff who taught an additional workshop in person.

Lecturer (Fixed Term)

University of Adelaide
2020 - 2021

During the first semester of 2020, I was given a fixed-term position. Working with Dr Bree Bennett, Dr David Harvey, and Dr Brian Ng, I was responsible for the design and teaching of a new first-year course covering the introduction of engineering drawing, CAD, and technical design to Engineering Technologists as part of the course Engineering Technology and Digital Design. Students in this class were required to complete a variety of assessments including the design of 3D models, engineering drawings, and online quizzes. This course was designed to be taught primarily online due to COVID-19.

Lecturer (Casual)

University of Adelaide
2020 - 2021

During the Australian summer of 2020, I worked with Professor Nickolas Falkner; the course Introduction to Programming for Information Technology Specialists was completely redesigned to utilize Jupyter notebooks for assessment. The language taught was also completely changed to Python with all material redesigned with slides recreated and material earmarked for new recordings.

Working under Dr Matthew Sorell in semester 2 of 2020, I was given the responsibility as the course coordinator, teaching 80 students completing Design and Innovation.

Tutor (Casual)

University of Adelaide
2019 - 2020

Reporting to Dr Braden Philips, I was responsible for running and coordinating the ECMS learning service for the combined first-year subject Digital Systems and Analog Electronics. This service was a drop-in style peer-assisted study session run twice each week and assisted on average five students each session with any tutorial, practical, and homework problems throughout the semester.

Lecturer (Casual)

University of Adelaide
2018 - 2019

In Trimester 3 of 2018, I ran the course teaching 3D Print Prototyping to Entrepreneurship students. This subject was taught in intensive mode and was by my design, having written it in the preceding summer. The course covers the essential operation of a 3D printer along with other 3D technologies such as laser cutters, computer numeric controlled machines, and the basics of formulating a small business to match a product to be successfully manufactured using such a tool.

Practical Demonstrator (Casual)

University of Adelaide
2016 - 2019

Reporting to Dr Hong Gunn Chew, I was responsible for the primary supervision and management of up to 90 students for first-year electrical and electronic engineering practical sessions. I ran the demonstrations and guided the students through their assignments. I was assisted by another junior demonstrator and would manage their participation and lead them in what would need to be done on any one day to maintain the class best.

Tutor (Casual)

University of Adelaide
2015 - 2016

Reporting to Dr Matthew Sorell, I conducted tutorials for the first-year electrical and electronic engineering subject EEIB. In addition to the tutorials, I also supervised mid-semester quizzes, did marking, and also supervised a replacement exam.

Course Development

Design and Innovation

Core course for 60 to 120 students introducing engineering processes of planning, design, and innovation, including ethical, social, and environmental responsibilities of professional engineers to undergraduates in the electrical and electronic bachelor suite of programs.

Engineering Technology and Digital Design

Core course for 12 to 25 first-year students providing an introduction to the role of an engineering technologist. Includes development of technical and professional attributes, interpersonal communication, and professional skills.

3D Print Prototyping

Course for 15 to 30 undergraduate and postgraduate students introducing additive manufacturing technologies and prototyping options. Covers 3D modeling, moral, ethical, and legal arguments in 3D printing, and future advances in the field.

Introduction to Programming for IT Professionals

Course designed for students with no prior programming experience, enrolled in the Bachelor of Information Technology. Introduces fundamental concepts of procedural programming with a focus on approaches relevant for IT.

Research Supervision

Masters Supervisor (Volunteer)

Tallinn University of Technology
2020 - 2022

Assisted in supervision and peer review of masters students as an external co-supervisor. Involved in review and marking of viva and thesis.

Honours Supervisor (Volunteer)

University of Adelaide
2018 - 2022

Supervised 12 honours students since 2017 as part of a supervision group with Dr Matthew Sorell.

Summer Research Scholarship Supervisor (Volunteer)

University of Adelaide

Supervised a summer research scholarship holder who completed a program of inquiry into the automatic categorization and moderation of short-form videos.

Summer Space Program Supervisor (Volunteer)

University of Adelaide
2019 - 2020

Details to be added pending approval.

Teaching Skills

- Lab demonstration
- Tutorial demonstration
- Lecturing
- Small group teaching
- Large group teaching
- Online learning
- Exam supervision
- Essay marking
- Exam marking
- Automated quiz design
- Blackboard
- Canvas
- Moodle
- Rubric design
- Oral presentation marking
- Whole semester assignments
- Group project supervision
- Syllabus design
- Zoom
- Microsoft Teams

Academic Service

- Member Advisory Board at Forensic Science International: Digital Investigation, Elsevier (2022 - Current) Link
- Organising Committee for DFRWS-APAC23 (2023 - 2024)
- Technology Chair for DFRWS-APAC22 (2021 - 2022)
- Peer Reviewer at Australian Institute of Criminology (2021 - Current)
- Peer Reviewer at Forensic Science International: Digital Investigation, Elsevier (2020 - Current)
- Peer Reviewer at IEEE Access (2020 - Current)
- Technology Chair for DFRWS-APAC21 (2019 - 2020)
- TPC Co-Chair for DFRWS-APAC21 (2019 - 2020)
- Member of Governing Council at University of Adelaide (2017 - 2020)
- Peer Reviewer at Digital Investigation, Elsevier (2019 - 2020)
- Member of Academic Board at University of Adelaide (2016 - 2017)

Expert Memberships

- Editorial Board: Forensic Science International - Digital Investigation (2019 -)
- INTERPOL Digital Forensic Experts Group (2021 -)
- UK Forensic Capability Network Visual Technologies Experts Group (2022 -) - Formerly 3D Experts Group
- UK Forensic Capability Network 3D Experts Group (2020 -)

Expert Witness

Expert Witness Cases

- R v HARRISON [2025] QDC (12 March 2025) - Expert Witness
- R v CAILES [2023] SADC 35 (14 Apr 2023) - Expert Witness
- R v CATALANO [2020] SADC 61 (22 May 2020) - Expert Witness

Reports Provided

- R v Singh - QDC (2025)
- Matter Listed for Retrial - QDC (2025)
- Client Name Withheld - FCCFCOA (2024)
- Ey v Fairmont Homes - Commissioner for Consumer Affairs Tribunal (2023)
- R v A (pseudonym) - South Australian Magistrates Court (2023)
- R v W (pseudonym) - Queensland Magistrates Court (2023)
- R v H (pseudonym) - Queensland Magistrates Court (2023)
- Private Client (2023)
- Private Client, Civil Matter - Queensland Magistrates Court (2022)
- Australian Broadcasting Corporation (2021)
- Mawson Lakes Football Club v Adelaide Footy League - Tribunal (2020)
- Royal Society for the Prevention of Cruelty towards Animals, Byethorne Duck (2017)

Advice Provided

- Attempted Murder Investigation in Queensland (2023)
- Review into the Inquest of Michael Cross in Queensland (2023)
- Civil Unrest in Washington DC (2021)
- Private Client (2022)
- Civil Unrest in Washington DC (2021)
- Private Client (2020)
- Private Client (2017)
- News Limited (2018)
- News Limited (2017)

* Every effort has been made to confirm the accuracy of the citation; however, it is acknowledged that errors may be present as a result of unreported judgments.

Continued Training

- Azure Fundamentals: 6 Part Course. Microsoft Virtual Training. 2025.
- Microsoft Summer AI Bootcamp: Gold Badge Attendee. Microsoft. 2025.
- Google for Startups Accelerator . Google. 2025-current.
- Intorduction to Mixed Reality. Microsoft. 2024.
- Building Copilots for startups. Microsoft. 2023.
- Microsoft Azure Fundamentals: Describe Cloud Concepts. Microsoft. 2023.
- Microsoft for Startups Accelerator . Microsoft. 2023-current.
- Apple Health Data. DFRWS APAC. 2022.
- Apple Health Data. DFRWS APAC. 2022.
- Fundamentals of University Governance. Forensic Audio Clarification using iZotope RX 8. Online. 2021.
- Fundamentals of University Governance. Australian Institute of Company Directors. 2019.
- Maritime Cyber Operations and Policy. Tallinn Maritime Academy. 2018.
- Open Source Intelligence and Policy. Tallinn University of Technology. 2017.

Member Bodies

Dr Matthews has made a commitment to the profession as a member of the following bodies:

- Australian and New Zealand Forensic Science Society
- Institute of Engineers Australia
- Australian Institute of Company Directors
- Institute of Electrical and Electronic Engineers

References

A list of references is available upon request.

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