

Eleanor McMurtry

MASTER'S CANDIDATE, APPLIED CRYPTOGRAPHY

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Summary

I am a Master of Science (Computer Science) student at the University of Melbourne researching applied cryptography with Vanessa Teague. I have been a programmer for years, and am passionate about education, security, and privacy. Research interests include zero-knowledge proofs, post-quantum cryptography, and multiparty computation.

Education

University of Melbourne

Parkville VIC 3010

M.Sc. (COMPUTER SCIENCE)

2019-present

B.Sc. (MATHEMATICAL PHYSICS)

2015-2018

DIPLOMA IN INFORMATICS

2015-2018

Experience

University of Melbourne

RESEARCH ASSISTANT

Jul 2019 - Present

- Working with Prof. Shanika Karunasekera to develop and deploy a large distributed cloud-based system for data collection and analytics. The project allows large volumes of data (e.g. from social media) to be categorised by topic and analysed for patterns.
 - Responsibilities include finding and fixing issues, as well as developing new features and system monitoring scripts.
- Assisted the security research group with grant applications.
- Working with Dr Olya Ohrimenko on attacks against differentially private mechanism implementations.

Blueprint for Free Speech

DEVELOPER LIAISON

Jul 2019 - Present

- Created a revived GitHub presence and website for the Ricochet end-to-end encrypted chat service operating over Tor.
- Helped update the C++ codebase and installation scripts to work with the latest versions of Tor and operating systems.

University of Melbourne

HEAD TUTOR (OBJECT-ORIENTED SOFTWARE DEVELOPMENT)

Jul 2016 - Present

- Managed the tutoring team for a core subject with hundreds of students, liaising between students, tutors, and lecturers.
- Developed major assignments for students, including specifications, marking criteria, and testing methodology.
- Delivered one to two lectures per semester on software tools and alternative paradigms while also teaching two to three tutorials per week.
- Excellence in Tutoring Award** (2017), School of Computing and Information Systems

Writing

Eleanor McMurtry, Olivier Pereira, Vanessa Teague. **When is a test not a proof?** To appear in ESORICS 2020.

Eleanor McMurtry, Xavier Boyen, Chris Culnane, Kristian Gjølsteen, Thomas Haines, Ronald Rivest, Peter Ryan, Vanessa Teague. **Verifiable Remote Voting with Paper Assurance.** In Submission.

Chris Culnane, Eleanor McMurtry, Robert Merkel, Vanessa Teague. **Tracing the challenges of COVIDSafe.** Blog post.

Honors & Awards

2020 **Student Registration Grant**, IEEE Symposium on Security and Privacy

*Oakland, California,
U.S.A.*

Presentation

CSides

Canberra, Australia

SPEAKER

June 2020

- Presented an introduction to cryptography and formal notions of security.

OWASP Melbourne Chapter Meetup

Melbourne, Australia

SPEAKER

July 2020

- Presented an in-depth exploration of the COVIDSafe mobile app, focusing on the root causes of the issues with its application security.