

# Eleanor McMurtry

MASTER'S CANDIDATE, APPLIED CRYPTOGRAPHY

✉ [eleanor.em.cs@gmail.com](mailto:eleanor.em.cs@gmail.com) | 🏠 [eleanorm.info](http://eleanorm.info) | 📺 [eleanor-em](https://www.youtube.com/channel/UC5t68031111111111111111)

## 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 Gjøsteen, 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.