Weiqi Feng

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Education

- **UMass Amherst,** *MS/Ph.D.*, Amherst, MA — **Sep 2019–Anticipated Sep 2025**
  Major in Computer Science — *GPA: 3.92 / 4.0*
  Coursework: Machine Learning, Neural Networks, Applied Cryptography, Advanced Cryptography, Secure Distributed Systems, Advanced Information Assurance
- **Wheaton College,** *Bachelor of Arts, Graduated with departmental honors*, Norton, MA — **Aug 2015–May 2019**
  Double Major in Mathematics and Computer Science, Minor in Statistics — *GPA: 3.85 / 4.0*
  Honors: Phi Beta Kappa, Balfour Scholarship, Mars Faculty-Student Research Grants, May fellow
  Awards: Madeleine F. Clark Wallace Mathematics Prize, Fred Kollett Prize in Mathematics & Computer Science

Programming Skills

- **Languages:** Python, C/C++, Java, Go, Haskell, R, JavaScript, Swift
- **Frameworks and Tools:** Pandas, Numpy, PyTorch, Flask, Node.js, Angular

Projects

- **Machine learning on encrypted data with Functional Encryption** — **Sep 2020 — Dec 2020**
  This project enables machine learning models to train on encrypted data so that models only learn the intended computational results.
- **Implementation of inner-product Function-revealing encryption** — **Sep 2020 — Nov 2020**
  This implementation achieves an inner-product construction of the function-revealing encryption scheme, allowing any third party with access to ciphertexts to compute inner-products on them.
- **Lexos: a software project supported by the *National Endowment for the Humanities* (*NEH*)** — **Jan 2017 — Jun 2019**
  Lexos provides scholars of literature with a web-based workflow for text processing, statistical analysis, and visualization of results when exploring digitized texts.
- **Honors Thesis in Abstract Algebra and Cryptography** — **Sep 2018 — May 2019**
  Developed a text shuffling encryption schema and a key exchange protocol inspired by group theories in Rubik's Cubes.

Leadership & Experience

UMass Cybersecurity Institute, *Graduate Research Assistant*, Amherst, MA — **Sep 2020 — Dec 2021**

- Designed inner-product construction for function-revealing encryption that is compatible with the federated learning technique, allowing central server to aggregate global model without knowing clients' data
- Conducted literature review on state-of-the-art topics on functional encryption such as multi-input functional encryption, decentralized encryption and indistinguishability obfuscation to formulate new primitive with more advantages
- Composed proofs for new constructions while proving the essential building blocks in the generic group model

PathAI, *Software Engineer*, Boston, MA — **June 2021 — Sep 2021**

- Created Plotly graphs to help clients better visualizing and analyzing performance of machine learning models
- Deployed Datadog on Kubernetes to monitor machine learning model usages and make improvements accordingly

Lexomics Research Group, *Software Team Leader*, Wheaton College, Norton, MA — **May 2018 — June 2019**

- Trained 15 software developers in Linux, Git, CI, and code coverage tools to familiarize them with the development environment
- Maintained a high standard of Python and JavaScript code quality within the team by establishing good practice through peer reviews
- Prepared manuals and documentation on the installation, operation, and maintenance of the Lexos software
- Designed interactive visualizations using Plotly to simplify clustering analysis results to improve ease of comprehension

Wheaton College Computer Science Department, *System Administrator*, Norton, MA — **Sep 2017 — May 2019**

- Maintained Ubuntu server that hosts the computer science department's homepage and performed weekly backups of user data
- Installed and configured software, hardware, and networks for 20 workstations in the computer science lab
- Evaluated systems' performance and troubleshot problems reported by users

Publications

- Acharya. O., Feng. W., Ghosal. R., Jain. A., O'Neill. A., "Function-Revealing Encryption, Revisited." Crypto 2022 (in press).
- Feng. W., LeBlanc D. M. "Top-10 Suggestions from a Decade of Managing Undergraduate Software Teams." The Journal of Computing Sciences in College, V34(6), April 2019, Pages 70-83.