

TRISHA CHADHA DATTA

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EDUCATION

Princeton University, Princeton, New Jersey

June 2019

B.S.E. Computer Science

Departmental GPA: 4.0, Cumulative GPA: 3.98, *summa cum laude*

Extracurriculars: Princeton South Asian Theatrics (President in 2017, Director, Writer, Actor); Engineering Quad Tour Guide; Tau Beta Pi member; Phi Beta Kappa member (one of 28 members in the class of 2019 selected for early membership)

SKILLS

Programming Languages: Java, Python, C#, Javascript, SQL, HTML, C, AWK, C++, Visual Basic, P4

Tools/Environments/OS: Eclipse, Android, MATLAB, LIBSVM, Visual Studio, Linux, Flume, React, Redux, Elasticsearch, scikit-learn

RESEARCH EXPERIENCE

Princeton University, Princeton, New Jersey

Fall 2018 – Spring 2019

Title: SPINE: Surveillance Protection in the Network Elements

Adviser: Professor Jennifer Rexford

- Developed SPINE, a system that leverages programmable switches and the increasing ubiquity of IPv6 in the network core to conceal IP addresses from intermediate (and potentially adversarial) autonomous system
- Developed an encryption scheme to encrypt IP addresses
- Implemented design and encryption mechanism in P4
- Published results at USENIX Workshop on Free and Open Communications on the Internet (FOCI) co-located with USENIX Security

Princeton University, Princeton, New Jersey

Fall 2018 – Spring 2019

Title: Using Word Embeddings to Investigate Bias in Online News and Political Speech

Adviser: Professor Christiane Fellbaum

- Combined state-of-the-art techniques from natural language processing and psychology to develop a standardized method of measuring bias in large corpora of online news and political speech
- Used word embeddings to calculate a metric that measures where social groups fall along the social dimensions of warmth and competences (i.e., the two social dimensions described by the Stereotype Content Model)

Princeton University, Princeton, New Jersey

Fall 2017

Title: Privacy-Preserving Traffic Obfuscation for Smart Home Devices

Adviser: Professor Nick Feamster

- Developed mechanisms to obfuscate IoT user activity by shaping TCP traffic flows from IoT devices using packet padding, packet fragmentation, and chaff traffic
- Implemented these mechanisms in a Python library for IoT device developers (available on Github)
- Presented results at 2018 Federal Trade Commission PrivacyCon Poster Session
- Published results at IoT Security and Privacy workshop at 2018 ACM SIGCOMM

WINLAB, Rutgers University, North Brunswick, New Jersey

Summer 2013

Title: Towards City-Scale Smartphone Sensing of Potentially Unsafe Pedestrian Movements

Adviser: Professor Marco Gruteser

- Created Android apps in Java to record smartphone sensor data
- Developed algorithms to predict when a pedestrian is about to cross a road using sensor data and tested algorithms in MATLAB
- Published results at the HotPlanet workshop at IEEE Mobile Ad hoc and Sensor Systems 2014

WORK EXPERIENCE

Flatiron Health, New York, New York

August 2019 - present

Software Engineer (E3), Practice Management Team

July 2020 – present

Software Engineer (E2), Practice Management Team

August 2019 – July 2020

- Developed features within OncoEMR (Flatiron's electronic health record) to facilitate the prior authorization process, which enables oncology clinics to be reimbursed for chemotherapy

Princeton University, Princeton, New Jersey

Spring 2019

COS 461: Computer Networks Grader

- Graded biweekly assignments and answered online student questions on Piazza

Princeton University, Princeton, New Jersey

Spring 2019

COS 445: Economics and Computing Undergraduate Teaching Assistant and Grader

- Held weekly office hours to help students with problem sets
- Graded biweekly assignments

Flatiron Health, New York, New York

Summer 2018

Software Engineering Intern, Practice Operations Team

- Created new feature with C# and Javascript for OncoEMR (Flatiron's electronic health record) to show complete history of an order to allow physicians to understand patient history
- Used Elasticsearch to store and fetch edit history and used React and Redux to render fetched information within OncoEMR

Princeton University, Princeton, New Jersey

Spring 2018 – Fall 2018

COS 340: Reasoning About Computation Lab Teaching Assistant

- Held weekly office hours to help students with problem sets

Google, New York, New York

Summer 2017

Engineering Practicum Intern, Structured Data Team, Research and Machine Intelligence Group

- Designed and implemented an end-to-end machine learning pipeline to predict correlations between fact-checking articles and news articles in Google Search and News
- Generated over 4000 pairs of fact-checking articles and news articles (using Flume and C++) for training data
- Trained ML models that matched fact-checking articles to debunked/verified material and achieved an accuracy rate of 86%

Microsoft, Redmond, Washington

Summer 2016

Explorer Intern, SQL Engineering and Learning Systems Team

- As a software engineer, created a website with Javascript and HTML to display cost information from multiple databases about internal Azure subscriptions and enable teams to understand and adjust their spending
- As a program manager, oversaw project to create algorithm to predict how many machines were needed for testing to reduce VM resource consumption and save time for engineers

Applied Communication Sciences, Basking Ridge, New Jersey

Summer 2015

Research Associate

- Performed research in active authentication to alert users to unauthorized use of their smartphones
- Created app usage features from public data set and used mutual information for feature selection in Java
- Used SVM (LIBSVM library) to learn the app usage behavior of a phone's authorized user
- Published results at 2015 IEEE MIT Undergraduate Research Technology Conference

HONORS/AWARDS

National Awards/Honor Societies

2019 **Computing Research Association Outstanding Undergraduate Researcher Honorable Mention**

2018 **Phi Beta Kappa Inductee**

One of 28 members in the Princeton class of 2019 selected for early membership

2017 **Tau Beta Pi Inductee**

Princeton University Awards

2019 **Phillip Goldman '86 Senior Prize in Computer Science**

Awarded for overall academic excellence, top prize in the Computer Science department

2019 **Outstanding Computer Science Independent Work Prize**

- 2019 **Sigma Xi Book Award for Outstanding Undergraduate Research**
- 2019 **Computer Science Department Student Teaching Award**
- 2018 **Accenture Prize in Computer Science**
Recognizes academic excellence in Computer Science through the end of Junior year
- 2018 **George B. Wood Legacy Junior Prize**
Awarded during Princeton University Opening Exercises each year to an undergraduate in the senior class in recognition of their exceptional academic achievement during their junior year
- 2018 **Princeton Research Day Silver Undergraduate Talk Award**
- 2017 **Lewis Center for the Arts Outstanding Work by a Sophomore Award** (for Creative Writing)
- 2017 **Shapiro Prize for Academic Excellence**
Recognizes ~80 Princeton undergraduates for outstanding academic achievement in their first or second years
- 2016 **Shapiro Prize for Academic Excellence**
Recognizes ~80 Princeton undergraduates for outstanding academic achievement in their first or second years
- 2016 **25 Under 25 Gala Honoree**
Celebrates 25 Princeton undergraduate projects for their innovation, impact, and communication

PUBLICATIONS

1. Trisha Datta, Nick Feamster, Jennifer Rexford, Liang Wang. "SPINE: Surveillance Protection in the Network Elements", in Proceedings of the 9th USENIX Workshop on Free and Open Communications on the Internet co-located with USENIX Security, Santa Clara, CA, August 2019 ([pdf](#)).
2. Trisha Datta, Noah Apthorpe, Nick Feamster, "A Developer-Friendly Library for Smart Home IoT Privacy-Preserving Traffic Obfuscation", in Proceedings of the IoT Security and Privacy Workshop at ACM SIGCOMM, Budapest, Hungary, August 2018 ([pdf](#)).
3. Trisha Datta, Noah Apthorpe, Nick Feamster, "Privacy-Preserving Traffic Obfuscation for Smart Home IoT Devices." FTC PrivacyCon Poster Session, Washington D.C., 28 February 2018.
4. Trisha Datta and Kyriakos Manousakis. "Using SVM for User Profiling for Autonomous Smartphone Authentication", in Proceedings of the 2015 IEEE MIT Undergraduate Research Technology Conference, Cambridge, MA, 6-8 November 2015 ([link](#)).
5. Trisha Datta, Shubham Jain, Marco Gruteser, "Towards City-Scale Smartphone Sensing of Potentially Unsafe Pedestrian Movements", in Proceedings of the 6th ACM HotPlanet Workshop at IEEE Mobile Ad hoc and Sensor Systems (MASS), Philadelphia, PA, 2014 ([pdf](#)).