TRISHA CHADHA DATTA

tcdatta@stanford.edu | Cell: (908) 625-9210 | https://trishadatta.github.io/

EDUCATION

Stanford University, Stanford, California   *2021 - Present*
Ph.D. Student, Computer Science, Advised by Dan Boneh

Princeton University, Princeton, New Jersey   *2015 - 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)

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," Federal Trade Commission PrivacyCon Poster Session, Washington D.C., 28 February 2018 (pdf).
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 (pdf).
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).

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 2019**

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 HotPlanet workshop, IEEE Mobile Ad hoc and Sensor Systems 2014**

WORK EXPERIENCE

Flatiron Health, New York, New York   *August 2019 - September 2021*
Software Engineer (E3), Practice Management Team   *July 2020 – September 2021*
Software Engineer (E2), Practice Management Team   *August 2019 – July 2020*
- Developed features within OncoEMR (Flatiron's electronic health record) to facilitate processes that enable oncology clinics to be reimbursed for treatments

Princeton University, Princeton, New Jersey   *Spring 2018 - Spring 2019*
Lab Teaching Assistant/Grader
- Spring 2019 – COS 461: Computer Networks Grader (graded biweekly assignments and answered online student questions on Piazza)
- Spring 2019 – COS 445: Economics and Computing Undergraduate Teaching Assistant and Grader (held weekly office hours to help students with problem sets and graded biweekly

assignments)
- Spring 2018, Fall 2018 – COS 340: Reasoning About Computation Lab Teaching Assistant (held weekly office hours to help students with problem sets)

Flatiron Health, New York, New York   *Summer 2018*
Software Engineering Intern, Practice Operations Team
- Created 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

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**

Stanford University Awards

2021   **Stanford Graduate Fellowship**

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 exceptional academic achievement during their junior year

2018   **Princeton Research Day Silver Undergraduate Talk Award**

2017   **Shapiro Prize for Academic Excellence** (for Sophomore Year)
       Recognizes ~80 Princeton undergraduates for outstanding academic achievement in their first or second years

2017   **Lewis Center for the Arts Outstanding Work by a Sophomore Award** (for Creative Writing)

2016   **Shapiro Prize for Academic Excellence** (for Freshman Year)
       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

SKILLS

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

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