

Peng Gao

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OBJECTIVE

A lifelong explorer in computer science and quantitative skills, with expertise in computer security and machine learning. Actively seeking internship opportunities in software engineering or data science.

EDUCATION

Princeton University, Department of Electrical Engineering Princeton, NJ

Ph.D. in Electrical Engineering, advised by Prof. Sanjeev R. Kulkarni and Prof. Prateek Mittal Sep. 2013 - Jun. 2018

- Research Interests: Security, Systems Research, Machine Learning, Data Mining

Princeton University, Department of Electrical Engineering Princeton, NJ

M.A. in Electrical Engineering Sep. 2013 - Jun. 2015

Shanghai Jiao Tong University, UM-SJTU Joint Institute Shanghai, China

B.E. in Electrical and Computer Engineering Sep. 2009 - Jul. 2013

- Academics: Graduated with the Highest Distinction; Rank 1/172
- Honors: P.R.China-National Scholarship in 2010 & 2011 (top 2.4%); UM-SJTU JI Distinguished Academic Achievement Award (twice, top 2%); SJTU First-Class Academic Excellence (top 3%); Excellent Graduate of Shanghai; etc.
- Experience: Internship with SimInsights Inc. (CA, USA); Teaching Assistant for five core mathematics courses

PROFESSIONAL EXPERIENCE

NEC Laboratories America Princeton, NJ

Research Intern, Computer Security Department Oct. 2016 - Dec. 2016

- Design a domain-specific language which empowers enterprise security analysts to launch continuous queries about risky system behaviors, in order to achieve real-time anomaly identification and enterprise system surveillance.
- Build an efficient data stream management platform which supports semantics-based query results caching.

NEC Laboratories America Princeton, NJ

Research Intern, Computer Security Department Nov. 2015 - Jan. 2016

- Designed a domain-specific language, *Temporal Behavioral Query Language (TBQL)*, which empowers enterprise security analysts to query complex risky system behaviors for Advanced Persistent Threats (APTs) investigation.
- Built the TBQL query system which scales up to terabytes of system events data and demonstrated that TBQL outperforms general database query language SQL 47x (with maximum 335x) in terms of execution efficiency.
- Deployed the TBQL system in NEC lab and incorporated it into the overall Automated Security Intelligence (ASI) system developed by NEC, which won the Grand Prix Award in CEATEC Japan 2016.

Microsoft Research Redmond, WA

Research Intern, Systems & Security Team in collaboration with Azure Forensics Team Jun. 2015 - Sep. 2015

- Designed robust algorithms for cloud-based fraud detection by leveraging big data analytics.
- Deployed the algorithms on Azure platform comprising 10k cloud instances and detected > 10 types of unseen fraud.

SELECTED RESEARCH & COURSE PROJECTS

Fake Accounts Detection in Online Social Networks Proposed a defense-in-depth framework that combines local attributes with global structure for robust fake accounts detection. Evaluated the framework on a large Twitter network comprising 50M nodes and 265M edges, and demonstrated its superiority over state-of-the-art.

Exploiting Temporal Dynamics in Social Sybil Defenses Explored temporal dynamics and vulnerabilities of state-of-the-art social Sybil defenses. Published a paper as co-first author in top security conference *ACM CCS* 2015.

Machine Learning Algorithms in Octave Linear & Logistic regression; Neuro Networks for hand-written digits recognition; SVM for spam filtering; K-means clustering and PCA for image compression; Anomaly Detection for detecting failing servers; Collaborative Filtering for movie recommendation; AdaBoost for Optical Character Recognition

Artificial Intelligence Algorithms in Java A* for solving Rush Hour puzzles; WALKSET for solving CNF satisfiability; MCMC for inference on Bayes nets; Viterbi for HMM; Value/Policy Iteration for MDP

Text Recognition and Translation App on Android Smartphone The app takes a picture of the English text and displays its Chinese translation on screen. Wrote the client in Java and Matlab and built a localhost server in PHP.

SKILLS & INTERESTS

Skills: C, C++, Java, Python, Matlab, Octave, R, Shell, SQL, HTML, CSS, Verilog, MIPS, Antlr, Latex, Microsoft Office

Languages: Chinese Mandarin (native)

Interests: Reading, Traveling, Basketball, Table Tennis, Jogging, Swimming