JANARTH DHEENADHAYALAN

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EDUCATION

CARNEGIE MELLON UNIVERSITY
Master of Science
Electrical and Computer Engineering
December 2020 | Pittsburgh, PA

**UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN**
Bachelor of Science
Computer Engineering
Minor in Mathematics
May 2019 | Urbana, IL

SKILLS

Proficient:
C • C++ • Python • x86 Assembly
Familiar:
MATLAB • Boost • CUDA • SystemVerilog • Slang
Concepts:
Machine Learning • Security • Multithreading

PUBLICATIONS

Which Privacy and Security Attributes Most Impact Consumers' Risk Perception and Willingness to Purchase IoT Devices? P. Emami-Naeni, **J. Dheenadhayalan**, Y. Agarwal, L. Cranor, 2021

Machine-Learning-Based Drug Reclassification **J. Dheenadhayalan**, 2021+

How Much Are People Willing to Pay for Privacy Features? P. Emami-Naeni, **J. Dheenadhayalan**, Y. Agarwal, L. Cranor, 2021+

Online Harassment and Related Trends A. Augustus, **J. Dheenadhayalan**, L. Cranor, 2021+

Denial of Service Exploits on CUDA Devices Using Clock Function **J Dheenadhayalan**, 2019

COURSEWORK

Machine Learning
Stochastic Processes
Real and Functional Analysis
How to Write Fast Code
Applied Cryptography
Foundations of Privacy
Intro to Computer Security
Making Sense of Big Data
Numerical Analysis
Algorithms and Models of Computation
Digital Signal Processing
Applied Parallel Programming

EXPERIENCE

AMAZON AWS - BLACKFOOT| Software Development Engineer
Summer 2020 | Seattle, WA
- Spearheaded, leaded, and designed fully automated workflow to detect and resolve device issues, significantly reducing operational overhead
- Implemented workflow to automatically change network server device type to migrate devices based on type
- Aided in effort to mitigate noisy-neighbor issues with multiple customers sharing the same hardware device

AMAZON AWS - BLACKFOOT| Software Engineering Intern
Summer 2020 | Seattle, WA (virtual)
- Designed and implemented memory mapped file IPC to create dynamically configurable network flow telemetry system
- Designed and built machine learning server health analysis tool, winning "Most Novel" award in Blackfoot Hackathon
- Held seminar on Introduction to Machine Learning for Blackfoot organization

GOLDMAN SACHS | Software Engineering Intern
Summer 2018 | New York, NY
- Designed algorithm to book trades that optimize traders' portfolios on private placement holdings
- Automated process to detect eligible American-European market transfer pairs, saving traders hundreds of thousands of dollars annually
- Implemented workflow system and protocol to automatically notify about status of trades, dramatically reducing time spent manually searching for pairs

POINT 72 ASSET MANAGEMENT, CUBIST SYSTEMATIC STRATEGIES | Quantitative Software Developer Intern
Summer 2017 | New York, NY
- Overhauled electronic trading protocol file parser
- Implemented flow control with multithreading to minimize RAM usage
- Standardized C++ parser with Python interface using Boost Python

Projects

RISC-V Processor
January 2019 – May 2019
- Wrote RISC-V processor in SystemVerilog from scratch
- Implemented entire pipeline, forwarding, hazard detection, negative-edge-triggered memory arbiter, L1 and L2 cache, victim cache, and neural-based branch predictor
- Branch predictor included highly optimized dot product calculation in hardware to compute neuron weights, resulting in 80% prediction accuracy across all test cases