JANARTH DHEENADHAYALAN

janarth.dheenadhayalan@gmail.com | https://www.janarthd.com

EDUCATION

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

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

NEW YORK UNIVERSITY
Summer 2016 | New York, NY
Advanced C++

WEST WINDSOR-PLAINSBORO
HIGH SCHOOL NORTH
Grad. June 2015 | Plainsboro, NJ

COURSEWORK

Senior Thesis
Machine Learning
Real Variables
Digital Systems Laboratory
Making Sense of Big Data
eCrime and Internet Service Abuse
Intro to Computer Security
Digital Signal Processing
Applied Parallel Programming
Algorithms and Models of Computation
Numerical Analysis
Computer Systems Engineering
Probability with Engineering Applications
Analog Signals and Systems
Linear Algebra
Data Structures

SKILLS

PROGRAMMING
Proficient:
C • C++ • LaTeX • x86 Assembly • Python
Familiar:
MATLAB • Boost • CUDA • SystemVerilog • Slang
Concepts:
Security • Multithreading • Thread Synchronization

EXPERIENCE

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
- Resolved breaks in risk management system and accounting records by synchronizing all steps of transfer process

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

DoS Using CUDA Clock: Attack and Defense
April 2018 – August 2019

- Publication under review by USENIX '20
- Discovered and studied new Denial of Service threat in two generations of CUDA devices on Windows, MacOS, and Linux
- Designed two algorithms to detect and prevent malicious programs from exploiting vulnerability, eliminating DoS attack

LINUX KERNEL
March 2017 – May 2017

- Wrote Linux Kernel from scratch
- Implemented paging, scheduling, keyboard drivers, terminal drivers, sound drivers with interface, read/write file system, heap-memory allocation, heap-memory leak checker
- Runners-up in OS design competition

PUBLIC SERVICE

EDGE-SCOTT FIRE PROTECTION DISTRICT | Volunteer Firefighter and Emergency Medical Technician
Winter 2018 – Summer 2019 | Urbana, IL

- Provided lifesaving interventions to patients in high stress and dangerous situations including car crashes and structure fires.
- Certifications: EMT-B, CPR, TRA, HazMat, NIMS, ICS, Bloodborne Pathogens