

Ajinkya Prabhu

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EDUCATION

Carnegie Mellon University <i>Masters in Mobile and IoT Engineering - 3.73/4.0</i> <ul style="list-style-type: none">Coursework - Compiler Design*, Distributed Systems*, Intro to Computer Systems, Information Security* Embedded Systems, Computer Networks,	Pittsburgh - Pennsylvania May 2022 – Dec 2023
Vellore Institute of Technology <i>Bachelors in Electronics and Communication Engineering - 9.1/10</i> <ul style="list-style-type: none">Coursework - Digital Logic Design, Machine to Machine communication, Information Theory and Coding, Advanced Micro-controllers	Vellore - Tamil Nadu July 2016 – June 2020

PROJECTS

X86 Back-trace <ul style="list-style-type: none">A debugging library to print the back-trace of a function call without the need of an interactive debuggerUses ELF debug symbols and x86 calling convention of stacking stack-frame register in the current stack-frame
MixNet - Privacy Oriented Routing <ul style="list-style-type: none">A protocol to obfuscate routing in networks prone to snooping and allows for a higher degree of privacyEmploys random routing and the spanning tree protocol which provides security, anonymity and fault tolerance
Realtime Operating System Kernel <ul style="list-style-type: none">A multithreaded kernel for the ARM cortex M4 based nrf52840 in C and AssemblyImplemented context switching, mutex and priority based scheduling rate-monotonic and priority-ceiling protocol
Contributor - Vega <ul style="list-style-type: none">Contributed to an open source project called Vega using the Rust programming languageDeveloped a distributed compute operator which is 10x faster than the popular apache spark platform

WORK EXPERIENCE

BlackRock <i>Software Engineer</i> <ul style="list-style-type: none">Collaborated with five software engineers to develop a data lake called Regulatory Book of Records (RBOR)Employed industry standard frameworks such as Apache Spark and Airflow compute and automated workflowsSpearheaded automated ingestion of securities data which pulls 600GB with 293 unique columnsBoosted batch query performance of securities data by 10x as compared to original relational query engine	Gurugram, India Jan 2020 – July 2022
Mantra Labs <i>Software Engineering Intern</i> <ul style="list-style-type: none">Analyzed and ported I2S protocol for a solid-state microphone on the Beaglebone black on linux driver platformDevised a facial recognition system for security cameras using the FaceNet research paper at an accuracy of 98%	Bangalore, India May 2018 – June 2018

RESEARCH

ITC <i>Student Researcher</i> <ul style="list-style-type: none">Collaborated with a team of students to develop a prototype that detects defects in high aspect ratio objectsDeveloped a convolutional neural network and image processing pipeline for object detection and classificationAchieved an accuracy of 82% while maintaining throughput of five sticks per second	Vellore Institute of Technology - Vellore May 2019 – July 2019
Creation Labs - Team AutoZ <i>Student Researcher</i> <ul style="list-style-type: none">Collaborated with a team of 10 students to develop an autonomous mobile robotLed development of sensor localization using kalman filters on GPS, inertial motion unit and wheel encoders	Vellore Institute of Technology - Vellore Sept 2018 – Nov 2019

SKILLS

Programming Languages: C, C++, Golang, Rust, Python, Scala, SQL, GNU Assembly
Technologies: GNU Toolchain, Linux, Git, CUDA, ROS, Apache Spark, Docker, Kubernetes, TensorFlow, PyTorch, Hadoop

PUBLICATIONS & PATENTS

Publication: Image Compression and Reconstruction Using Encoder-Decoder Convolutional Neural Network - Prabhu A., Chowdhary S., Narayanan S.J., Perumal B.
Patent: A scanning device for inspecting and sorting high aspect ratio objects and method thereof - N202041047428

AWARDS & ACHIEVEMENTS

Merit Scholarship: Awarded merit Scholarship for exceptional academic performance for 2 consecutive years