




Pratiksha Pai

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EDUCATION

Masters Electrical and Computer Engineering (<i>Computer Systems and Software</i>)	CGPA: 3.93/4.0
Georgia Institute of Technology, Atlanta, GA	Aug 2022 - Present
Bachelors Electrical Engineering (<i>Minor in Computer Engineering</i>)	CGPA: 9.03/10.0
NIT, Karnataka, India	Aug 2015 - May 2019

EXPERIENCE

- Mathworks** Natick, US
 - Engineering Development Group Intern* June 2023 - August 2023
 - Cloud Install Manager - Development & Automation** | Go, Docker, Perforce
 - Led multi-team effort to develop Cloud Install Manager, automating workflows, cutting setup from 2+ hours to 30s.
 - Implemented a parallel execution engine for 17+ packages with Go's concurrency, reducing build time by 70%.
- Georgia Institute of Technology** Atlanta, US
 - Graduate Research Assistant* Jan 2023 - Present
 - Advanced Real-Time Human Motion Tracking** | CV2, Mediapipe, Deeplabcut, OpenBCI
 - Fine-tuned & open-sourced DeepLabCut EfficientNet with 1500+ frames, adapting to human motion tracking from animals
 - Boosted video capture rate from 120 to 1000+ FPS at WUXGA, via a modular, multi-threaded system.
 - Created a toolkit with CV2, Google MediaPipe, enabling real-time behavioral analytics, higher-dimensional mappings
- Infoworks.io** Bangalore, India
 - Senior Software Engineer* Jan 2021 - July 2022
 - Received the **Be The CEO award for 2021 among 100+ developers** for exceptional ownership skills.
 - Horizontal Pod Autoscaling for MongoDB on Kubernetes** | Kubernetes, GCR, MongoDB, Bash, Git Actions
 - Led Kubernetes containerization for MongoDB and 5 core services, cutting system startup latency from 90s to 4s.
 - Automated MongoDB's transition to a resilient 3 node replicaset, interfacing with the 4+ core services in production
 - Attained a max failover time of 4s and replication latency of 0.47s, enhancing database reliability in production.
 - Utilized Github actions, Helm, GCR for a standardized and efficient deployment process used by 4+ teams.
 - Automated Product Upgrades** | Python Taskflow Graph, Linux, Mongo, Airflow
 - Implemented cross platform end-to-end install/upgrades for 9+ services and data components used on 1000+ customer environments through multi-threaded Taskflow Engines.
 - Led the production migration of 2.6M MongoDB metadata documents using Python Taskflows.
 - Wrote a 200GB MongoDB Atlas transition, with 30+ system critical checks for data validity.
 - Designed Apache Airflow test suites, uncovering 20+ system-critical and 120+ routine bugs in the MVP.

ACADEMIC PROJECTS

- Georgia Institute of Technology** Atlanta, US
 - Course Projects* Aug 2022 - Present
 - Advanced Computing** | C++, OpenMPI, CUDA, Python, Sockets | Nov'22
 - Achieved 4x speedup in quicksort and Jacobi iteration via parallel algorithms and MPI in C++
 - Wrote efficient data partitioning techniques that reduced & storage complexity by an order of magnitude of $O(n)$.
 - Wrote a C++ TCP client-server system using sockets wrapper for real time interaction with the system.
 - Network Simulation & IoT Modeling** | C++, NS3, Python | April'23
 - Modified NS3 scripts to simulate diverse network and rate-adaptive WiFi controls, benchmarking network efficiency.
 - Crafted high-radius IoT network simulation using NS3 and LoRaWAN, assessing performance.
 - Blockchain Transaction Optimization** | Python, Web3, Solidity | April'23
 - Crafted a Python toolkit with Web3 and Solidity, automating 500+ transactions for academic blockchain currency.
 - Engineered nonce-finding, hash validation, dynamic pricing algorithms, enabling effective search through 15,000 nonces

TECHNICAL SKILLS

- **Languages:** Bash, C++, Go, JSON, Python, Solidity, Web3
- **Frameworks:** CUDA, MPI, OpenMP, SFML
- **Relevant Courses:** Adv. Programming Tech, High Perf. Computing, Computer Networks, Computer Vision, Generative DL, Neural Networks, Stat ML