Raghav Prasad

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EDUCATION

UNIVERSITY OF CALIFORNIA, SAN DIEGO — LA JOLLA, CA
M.S. Computer Science (Systems); GPA: 3.825 — Sep 2021 - Mar 2023 (expected)
Coursework: Distributed Computing & Systems, Parallel Computing, Operating Systems, Networked Systems

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI (BITS) — GOA, INDIA
Bachelor of Engineering (Computer Science); GPA: 3.90 — Aug 2017 - Jul 2021
Coursework: Operating Systems, Object-Oriented Programming, Data Structures and Algorithms

EXPERIENCE

COINBASE — SAN FRANCISCO, CA
Software Engineer Intern, ML Systems and Services — Jun - Sep 2022

- Engineered a custom heuristic-based approach to solve a cold start problem that caused novel content to not be displayed in the app's home page feed
- Leveraged realtime content impressions to uprank new content without compromising metrics such as mean reciprocal rank (MRR), mean average precision (MAP), and mean area under curve (AUC) for clicks

W.M. KECK CENTRE FOR NEUROPHYSICS, UCLA — LOS ANGELES, CA (REMOTE)
Research Intern — May 2020 - Aug 2021

- Designed and implemented the second generation of a Multimodal Virtual Reality system using C#, Unity, Python, Blender, and Arduino, increasing the system speed by up to 100% compared to previous generation
- Implemented a new computer vision based motion tracking subsystem which increased tracking accuracy by 27%
- Devised an Arduino-based multi-stream data synchronization method alongside communication protocols using websockets and serial APIs which minimized synchronization latency, improved hardware efficiency and reduced computing costs

COGNITIVE NEUROSCIENCE LAB, BITS — GOA, INDIA
Research Intern — Sep 2019 - Jul 2021

- Constructed an end-to-end PET data processing pipeline using Python, R, and shell scripts to construct and analyze brain networks to ascertain the progression of Alzheimer's Disease, creating a new benchmark in PET data processing
- Engineered pipeline using concurrent programming to attain up to 5-fold speedup compared to the state-of-the-art method
- Analyzed brain networks using novel graph theoretical methodology to set a new research standard in the early detection and prevention of Alzheimer's Disease

GNOWLEDGE LAB, HOMI BHABHA CENTRE FOR SCIENCE EDUCATION — MUMBAI, INDIA
Software Development Intern — May - Jul 2019

- Built an administrative web plugin using Ember.js, Ruby on Rails, HTML+CSS, Docker, and git. Used to curate coherent knowledge networks for an open-source learning platform resulting in an enhanced user experience for ~4000 users
- Optimized PostgreSQL database schema to enable fast search and retrieval over ~32000 articles, ensuring scalability and robustness of the plugin on larger instances of Discourse.org
- Established a template that will enable any future Discourse.org instances to be seamlessly converted into a highly scalable learning/content management system by simply integrating our plugin

PROJECTS

- **Microblogging platform:** Developed a scalable and fault-tolerant distributed system for users to post and view 140-character microblogs. The system can scale to 300 backends, handle concurrent requests with low-latency while maintaining causal consistency, and can tolerate up to 297 failstops without data loss
- **Twitter Dapp:** Developed a blockchain-based implementation of Twitter using Python and Solidity. Optimized the code to minimize latency and reduce gas fees by around 79.57% compared to a traditional distributed systems approach
- **Cloud distributed file storage:** Built a cloud-based distributed file storage system (like Dropbox) called *Surfstore* using Go. The system allows multiple clients to concurrently sync their local files to a server which stores files as distributed *blocks*.

SKILLS

Languages: Python • Golang • Rust • C/C++ • Java • Shell scripting • C# • React.js • HTML+CSS
Tools and Competencies: Networking • UNIX/Linux • Docker • MySQL • PostgreSQL • CI/CD • Systems programming • git