Varun Patil

varunpatil@ucla.edu | varunpatil.me | github.com/pulsejet

EDUCATION

University of California, Los Angeles   California, USA
M.S. Computer Science   *2020 – Present*

Indian Institute of Technology Bombay   Mumbai, India
B.Tech, Mechanical Engineering   *2016 – 2020*
Minor in Computer Science and Engineering, Institute Technical Roll of Honour

EXPERIENCE

UCLA   Los Angeles, California
Graduate Student Researcher – Internet Research Laboratory   *Apr. 2021 – Present*
- Conducting research on Named Data Networking with focus on distributed data synchronization protocols
  Publications
    – **Patil**, Moll, Zhang, 2021. *Supporting Pub/Sub over NDN Sync.* ACM ICN '21
    – Moll, **Patil**, Sabharwal, Zhang, 2021. *A Brief Introduction to State Vector Sync.* TR-NDN-0073
- Authored the reference implementation of the State Vector Sync protocol and a demonstrative chat application
- Implemented a network and security simulator-visualizer (NDN-Play) for running experiments in the browser

IIT Bombay   Mumbai, India
Software Architect & Developer – Single Sign On, Computer Centre   *Sep. 2019 – Sep. 2020*
- Drafted a policy framework for enforcing multi-factor authentication on a diverse 10000+ organization
- Implemented an OAuth2/OIDC/SAML provider for authorization over LDAP-TOTP-FIDO authentication
- Implemented a very high performance geolocation provider (GeoIPNS) for suspicious activity detection
- Authored popular open source plugins for migrating Nextcloud and Roundcube webmail to OpenID Connect
- Conceptualized and developed Android and iOS clients for secure user-initiated passwordless authentication
- Integrated authentication with SAML federated identity for Azure Active Directory and Google Workspace

Institute System Administrator & Developers' Community Overall Coordinator   *Apr. 2019 – Jun. 2020*
- Led the community of software developers at the institute comprising of a 3-tier technical student team
- Administered the student datacenter hardware infrastructure and migrated from virtualization to LXC
- Developed a secure solution to digitize workflows in a decades-old system in emergency response to COVID-19

Undergraduate Researcher   *May – Jul. 2018*
- Worked on data processing and neural net architecture for correcting grammatical errors with deep learning

Mercari, Inc.   Tokyo, Japan
Backend Software Engineering Intern – Product Catalog   *Jul. 2019*
- Worked in an agile team to develop an industry-grade management tool for an arbitrarily large dataset
- Set up continuous integration and deployment over Kubernetes using CircleCI and Terraform

PROJECTS

InstiApp | *Django, Angular, Android, Flutter*   *2018 – 2020*
- Led a team of 20+ developers in developing a FOSS student activity platform stack with 8000+ active users
- Implemented a non-linear model to map real-time geolocation coordinates to an artistic isometric projection

Cross-Platform Aveyond | *Ruby, C++, GLES, Java, WebAssembly*   *2015 – 2019*
- Ported eight Windows games to Linux, macOS and Android using a popular open source engine
- Ported the GLES game engine to the web with Emscripten and adapted for asynchronous asset loading

TECHNICAL SKILLS

Advanced: JavaScript/TypeScript, Python, C++, Docker, Git
Intermediate: C#, Ruby, Java, Golang, PHP, C, Lisp, Lua, Kubernetes