

VEDANT YATIN PIMPLEY

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EDUCATION

Arizona State University (ASU), Tempe, AZ, USA

January 2024 – December 2025

Master of Science in Computer Science

Courses: Advanced Operating Systems, Machine Learning, Data Processing at Scale, Algorithms

University of Mumbai - Thadomal Shahani Engineering College (TSEC), India

August 2016 – July 2020

Bachelor of Engineering in Information Technology

Courses: DS&A, Databases, OS, Big Data Systems, Automata Theory, Networks, Cloud Computing, AI, IoT

TECHNICAL SKILLS

- **Languages:** Java, JavaScript, Python, C++, SQL, OCaml, TLA+, Dafny, X10, HTML, CSS, R
- **Technologies:** Git, CI/CD, React.js, Node.js, MongoDB, YARN, Apex, Automated Program Verification
- **Tools:** RegEx, Agile, MaterialUI and AntD libraries, SPA, LWC Framework, Web Storage API, Jupyter notebooks

PROFESSIONAL EXPERIENCE

Indian Institute of Technology, Madras (IIT - M), India

July 2022 – December 2023

Research Associate, PACE Lab

- Optimized distributed computations for the X10 supercomputing language
- Reduced communication cost of computations by leveraging the physical locality of virtual compute nodes
- Developed four novel program transformations, yielding a ~5x speedup for highly distributed applications
- Implemented Visitor pattern on the X10 Abstract Syntax Tree (AST) within X10 compiler to produce high-performance C++ code as output

Deloitte United States, India

January 2021 – June 2022

Software Developer

- Developed full stack system for Govt. of Maine, USA, to handle millions of applications for state benefits related to Medicaid, food stamps, cash assistance, by using Apex and Lightning web component
- Built high-volume servers (>10k concurrent users) by implementing efficient backend controllers in the Apex language, despite strict compute limits imposed by Salesforce cloud
- Fixed recurring Sev-1 incident by creating a novel validator framework to eliminate all edge cases entirely
- Received coveted Deloitte annual Applause award, conferred on the top organization-level software engineer

Rolta India Ltd, Mumbai, India

June 2018 – July 2018

Software Engineering Intern

- Established a web-application using JavaServerPages and MVC for \$6.4B Govt. of India's Smart Cities project
- Detected 26 major bugs and doubled the team-wide bug-fixing rate by serving as a communicator between functional and technical teams

ACADEMIC PROJECTS

Thesis: Feature-complete CRM for Stockbrokers (SpearCRM)

[Link](#)

- Created end-to-end application for small-scale stockbrokers to modernize their workflow by using MongoDB, Flask, React.js, JWT, SessionStorage API, Spacy NER, Netlify, Heroku for full-stack development
- Guaranteed 7400 real-time stock prices to the user by making a self-updating cache doing 30 callouts/min
- Released with extensive documentation on GitHub as AGPLv3 open-source offering

Automatic Text Capitalizing Chrome extension (ApexCase)

[Link](#)

- Built Javascript browser extension to automate upper or lower-case text formatting with a single-click using RegEx
- Gained 1000+ active users on Chrome Web Store, and scales easily to 1 million words of input at a time
- Awarded 'Featured' badge on the Chrome Store for meeting high standards of UI/UX

TLA+ Specification of TCP/IP Handshake Protocol

[Link](#)

- Wrote formal specification of multi-client Transmission Control Protocol/Internet Protocol 3-way handshake based on invariant properties and state machine behaviors
- Verified correctness by exhaustively checking 2000 distinct states for 4-client system using TLA+ Toolbox

EXTRA CURRICULAR ACTIVITIES

- Awarded Best Presentation in the Automated Program Verification series at IIT-M on 'Incorrectness Logic', 2023
- Conducted a CS department seminar on 'Abstract Interpretation Repair' for the PACE Lab at IIT Madras, 2022
- Organized global all-hands meeting which included highest-level project stakeholders at Deloitte, 2021
- Coordinated the annual alumni event at TSEC and received 100+ distinguished alumni, 2019