Pranchal Shah

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EDUCATION

Northeastern University, Boston, MA — May 2025
Khoury College of Computer Sciences
MS in Computer Science - Align (Concentration: Systems and Software) — GPA: 4.00
Related Courses: Computer Networks, OOP, Database Management Systems, Network Security.

Harvard University, Cambridge, MA — December 2022
Masters in Architecture and Computational Design, (Incomplete)

Sardar Patel University, India — December 2019
Bachelors in Architecture

TECHNICAL SKILLS

Programming Languages: Python, Java, C/C++, C#, JavaScript, TypeScript, Swift.
Frameworks & Libraries: Django, ReactJS, ExpressJS, NodeJS, JUnit, Electron, Mockito, Swing, Matplotlib, D3.
Others: noSQL, MongoDB, mySQL - Relational Databases, Unix Shell Scripting, Git, Linux, AWS, iOS Development.

WORK EXPERIENCE

Computational Designer — *August 2020 - July 2022*
Sangath LLP, India

- Crafted and **deployed 10+ C# plugins** and scripts utilizing Visual Studio and RhinoCommon SDK. Achieved a **30% reduction in modeling time**, optimizing generative design algorithms.
- Created energy generative design algorithms incorporating parametric modeling and structural analysis techniques. Significantly **reduced energy usage by 27%** - understood with simulations.
- **Automated 40% of repetitive documentation tasks** through Python scripts, resulting in the **elimination of over 200 man-hours** per project. Accelerated 3D model and documentation generation by 45%
- Spearheaded data processing and analysis efforts, contributing to a **27% reduction in construction waste**. Demonstrated a data-driven approach, fostering sustainable practices.

Graduate Teaching Assistant, Frontend Development, Northeastern University, Boston — *September 2023 - Present*

- Boosted the **scope of students' practical projects by 30%** through clear and effective teaching methods, coupled with immediate technical assistance. This enhancement in hands-on experience led to a significant improvement in their understanding and application of JavaScript, D3, and React.

PROJECTS

Codebase Explorer - Open Source codebase visualizer | *Github* — *October 2023 - Present*

- Developed a custom parser using C++ within a graph-based structure. The parser is capable of parsing **1500+ files in under 10 seconds**, providing a high-level overview of the codebase.
- Detailed dependency analysis allows users to identify and address issues proactively, aiding developers in optimizing their workflows and ensuring efficient resource utilization. This tool has the potential to impact **13 million C++ developers** by improving their codebase understanding and efficiency.
- Accomplished a **30% increase in codebase size** by designing and implementing a scalable architecture for the Electron Application. Used ReactJS and D3 framework to create a web app that renders visualizations.

NBA StatsSphere - Real Time Stats Tracker | *Live* | *Github* — *September 2023 - December 2023*

- Empowered millions of basketball enthusiasts and professionals by accomplishing a comprehensive platform for tracking and analyzing NBA statistics. Tracked and rendered data for over **4,800+ players, 63,000+ games, and 3,300+ coaches across 78 seasons**, ensuring insights into game performance and player metrics.
- Accomplished rapid data retrieval and storage **under 1.5s consistently** by developing REST APIs. Integrated MySQL with the application, for a seamless user experience.

P2P Trackpad - Use iPhone as a Trackpad to control Mac | *Github* — *December 2023 - Present*

- Accomplished real-time interaction between iPhone and Mac devices by establishing a secure Local Network P2P communication channel. Achieved an **latency of 25 milliseconds**, facilitating seamless, instantaneous data exchange for efficient and secure cross-device connectivity.
- Leveraged Swift and UIKit to create a robust iOS application, capable of capturing and interpreting touch gestures. Developed a macOS companion app using that acts as a receiver of the network channels.
- Engineered accurate and responsive gesture recognition algorithms to enable a diverse range of user interactions. The application **supports 15 unique gestures**, providing users with a comprehensive control scheme.