Akshar Patel

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EDUCATION

Bachelor of Science, Computer Science ***Graduated: Jan 2021***
Minor, Mathematics & Statistics ***GPA: 3.57***
CALIFORNIA STATE UNIVERSITY SACRAMENTO

- **Selected Coursework**: Compiler Construction, Statistical Computing (R), Data Visualization, Data Mining, Algorithms, Database Systems, Software Engineering, Advanced Algorithms, Artificial Intelligence, Parallel Programming with GPUs, Cloud Computing.

SKILLS

- **Programming Languages:** Java, C, Python, R, C++, C#, Rust
- **Web Development:** HTML, CSS, JavaScript, TypeScript, Bootstrap, Angular, React, Django, NodeJS, ASP.NET Core, .NET Core, Redux
- **Data Science & AI:** Numpy, Pandas, Scikit-Learn, Tensorflow, Keras, Semantic Kernel, LangChain, RAG, Prompt Engineering
- **Compiler Construction:** Lexical Analysis, Parsers, Semantic Analysis, Abstract Syntax Tree, Code Generation, Optimizations,
- **Databases:** My SQL, Postgre SQL, SQL Server, MongoDB, CosmosDB, Kusto
- **Cloud & Systems:** Azure, AWS, Orleans, ServiceFabric, Azure Open AI
- **Tools:** Git, Docker, Azure Deveops, JIRA, Selenium Web Driver, Visual Studio Code, IntelliJ, PyCharm, Eclipse, Visual Studio

RELEVANT WORK EXPERIENCE (More on: https://www.linkedin.com/in/akshar-patel-378071122/)

Senior Software Engineer (L64) ***Sep 2025 – Current***
Senior Software Engineer (L63) ***Sep 2024 - Sep 2025***
Microsoft, Atlanta GA

- **Dataflow Analysis Engine**: **Designed, implemented, and delivered a major and core dataflow analysis engine** to all users of PowerApps that **improved App Loading, Runtime and Authoring Performance by 90% for Millions of Users**. **Architected and implemented state-of-the-art incremental and non-incremental graph and dataflow analysis algorithms** using **C#/.NET**. Researched and designed algorithms for **incremental strongly connected components maintenance** to allow for **faster dataflow analysis for incremental editing operations**.
- **Distributed Coauthoring System: Contributed to the design and implementation of a highly distributed and fault-tolerant system** for driving coauthoring experiences in Power Apps, based on **Persistent Data Structures** using **C#/.NET, Orleans, Azure SignalR**.
- **Generative AI: Developing Generative AI Experiences for Microsoft Plan Designer and Vibe Coder** that allow users to create complete end-to-end business solutions using **GPT models, Azure OpenAI, TypeScript, and React**.
- **LLM-Driven Business Process Modeling: Delivered highly qualitative, resilient and state of the art BPMN 2.0-inspired business process modeling capabilities with a 95% acceptance rate for more than 70K users** of Microsoft Power Platform Plan Designer, using **GPT models, Azure OpenAI, TypeScript, and React**. Invented a **custom domain-specific language** and engineered **sophisticated compiler infrastructure** featuring **incremental parsing algorithms, control flow graph decompilation, and intelligent error recovery systems** for seamless AI-powered workflow generation.
- **AI-Driven Autonomous Agent (Hackathon Winner): Led a team to victory in Global Hackathon 2024** within Power Apps by **developing a fully Autonomous AI Agent** that coauthored canvas apps in live authoring sessions with human makers using **Azure OpenAI, C#/.NET, WebSockets/Azure SignalR, GPT Models, TypeScript, React**.
- **AI-Driven Renaming (US Patent): Architected and developed US patented AI-Driven Autonomous Renaming of UI Controls in Power Apps** using **C#/.NET, Azure OpenAI, React** with **advanced prompt engineering techniques**.

Software Engineer II (L62) ***Sep 2023 – Sep 2024***
Software Engineer (L60) ***Feb 2022 - Sep 2023***
Microsoft, Atlanta GA

- **Code Editing:** Enabled rich **PowerFx editing experience** for more than **2 million monthly active users** of **Power Apps** alone and other **Power Platform Products** by designing and implementing **Language Server** and **VSCode based Editor** with features like **Syntax Highlighting**, **Intellisense** using **VSCode based Monaco-Editor, Language Server Protocol, C#, React, TypeScript, Redux, SignalR, WebSockets.**
- **Generative AI/Microsoft Copilot:** Ideated, architected, and developed end to end scalable **PowerFx editing Copilot experiences** with **50K monthly active users** such as **Github Copilot alike PowerFx Comments to Code** using **Natural Language to PowerFx** and vice versa **GPT models, TypeScript, Monaco Editor, Language Server Protocol, C#, Azure Open AI, WebSockets.**
- **PowerFx Compiler:** Contributed to the development of **Microsoft's open-source low code programming language PowerFx** by fixing outstanding bugs in different phases of **PowerFx** and implementing **language service protocol**.
- **Global Hackathon 2023:** Successfully led a team to victory in **Hack for Developers Category** within **Power Apps** that worked on **Visual Studio Code Extension** and **Language Server** to add support for low code language **PowerFx** with features like **Intellisense, Go To Definition, Syntax Highlighting, and Signature Help** using **NodeJS, TypeScript, C#, Language Server Protocol, SignalR**

Software Engineer ***Jan 2021 - Oct 2021***
Intel Corporation, Folsom CA

- **Web Development:** Developed a configurator web app to manage firmware configurations using **Angular, TypeScript, JavaScript, Kendo UI, Bootstrap, HTML, CSS, Python, Django, and SQL Server**.
- **Compiler Construction:** Developed a **custom configuration language and rule system for firmware developers**, building the surrounding **compiler infrastructure using Python, PLY that increased the efficiency and managing firmware configurations by 90%.** Designed and **developed highly incremental and efficient Multi-Graph Data Structure Based Algorithms** to evaluate firmware configurations.
- **Git Workflow Integration:** Integrated Git Workflow to manage configurations with configurator web app using **Python, Django, GitPython, Git, Bitbucket APIs,** thus resulting in **full automation of workflow and increase efficiency in managing changes to configurations by 90%.**

PROJECTS (More on: https://github.com/akshar2401)

Programming Language Detection: (Python, TensorFlow, Keras, Scikit-Learn, Numpy, Pandas)

- Designed and implemented a CNN model with 92% accuracy to detect the programming language based on the images of the code snippet.

Optimizing Instruction Scheduling (C++, LLVM, CUDA):

- Researched and contributed to the development of branch and bound algorithms and ant colony optimization algorithms to generate an optimal instruction schedule.