Akshar Patel

(669) 241- 8220 * aksharpatel@csus.edu

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 Management Systems, Software Engineering, Advanced Algorithms, Intro to Techniques of Operations Research, Intelligent Systems, Parallel Programming with GPUs, Cloud Computing and Pragmatics, Linear Programming, Data Mining for Business Analytics.

SKILLS

- **Programming Languages:** Java, C, Python, R, C++, C#
- **Web Development:** HTML, CSS, JavaScript, TypeScript, Bootstrap, Angular, React, Django, NodseJS, ASP.NET Core, .NET Core, Spring MVC
- **Data Science Libraries:** Numpy, Pandas, Scikit-Learn, Tensorflow, Keras.
- **Compiler Construction:** Lexical Analysis, Parsers, Semantic Analysis, Abstract Syntax Tree, Code Generation, Optimizations, Bison, Flex
- **Databases:** My SQL, Postgre SQL, SQL Server, MongoDB
- **Tools:** Git, Docker, AWS, Azure, Azure Deveops, JIRA, Selenium Web Driver, Eclipse Java EE, Intellij, PyCharm, RStudio, Visual Studio

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

Software Engineer ***Feb 2022 - Current***

Microsoft, Atlanta GA

- Currently, working on Pro Developer Tooling using **C#, React, TypeScript, and Azure** for Microsoft Power Platform and PowerApps.
- Developing a tool to convert custom API connector created using Open API/Swagger File into PowerApps UI using **C#, OpenAPI.NET**
- Contributing to open source **PowerApps Language Tooling** project which enables canvas apps to be edited outside PowerApps Studio.

Software Engineer II ***Jan 2022 – Feb 2022***

Butterfly Network Inc, Virtual

- **Fullstack Development:** Developed a token exchanging system to generate and exchange tokens for different identity providers using **Python, Flask, Flask-RESTy, SqlAlchemy, React, GraphQL, and AWS.**

Software Engineer ***Jan 2021 – Oct 2021***

Intel Corporation, Folsom, CA

- **Backend Development:** Implemented and owned REST APIs for many aspects of managing Intel firmware configurations using **C#, .NET core, ASP.NET Core, MongoDB.**
- **C Header File Parser:** Developed a parser using **C#, CppAst** to compile and extract Enum constructs from uploaded header files and map Enum members to configurations with name same as Enum names, **thus effectively replacing manual entries of Enum members with automatic importing**
- **Technical Hacks:** Employed useful technical hacks, **such as using polymorphism to use dummy models derived from real entity models**, to achieve more flexibility, control, and effectiveness during unit testing.

Compiler Research Assistant Volunteer ***Jan 2021 – Dec 2021***

California State University Sacramento, Sacramento CA

- **Instruction Scheduling**: Implementing Parallel Ant Colony Optimization Algorithm to find optimal schedule for GPU target-based instructions with minimum register pressure cost using **C++, CUDA, and LLVM**.
- **Benchmarks**: Compiling and running floating point calculations and machine learning benchmarks with Parallel Ant Colony Optimization Instruction Scheduling algorithm enabled to gather and analyze its performance data.

Software Undergraduate Intern ***July 2019 – Dec 2020***

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 context free grammar and parser using **Python, Ply** for firmware configurations expressions of different data types. Implemented semantic analyzer for type checking. Built C language code generator to generate firmware build files from 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%.**
- **Algorithm Design: Modeled different types of dependencies among different firmware configurations as Multi-Graph data structure** and implemented optimized iterative Depth First Search to traverse the Multi-Graph to resolve dependencies.

Software Developer Intern ***June 2018 - Aug 2018***

Federal Reserve Bank of St Louis, St Louis

- **Test Automation**: Implemented a framework using **Java, Selenium WebDriver, Robot API, JavaScript, TestNG, and PostgreSQL** which **increased the efficiency of development of automation scripts by 70% and served efficiently as shared framework among automation engineers.**
- **Automatic Test Harness**: Implemented an internal web-based tool using **Java, Jaspic, HTML, CSS, JavaScript, JSP** that authenticated, protected and, depending on requesting environment (Dev, QA), forwarded appropriate HTTP headers to applications deployed on server, thus **replacing existing tool that requires daily fixes and reducing time consuming manual efforts by 80%.**

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

Mini C Compiler: (C, Bison, Flex, Python)

- Developed Mini C compiler with scanner, LR (1) Parser, Semantic Analyzer, AST Tree Generator, Code Generator and Local Register Allocator.

SAVIS: (Node Js, D3.js, Chart.js, JavaScript, Electron)

- A statistical educational tool to help intuitively understand tests of statistical hypotheses and confidence intervals through simulations and visualizations.

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.

Histogram: (CUDA, C++, Parallel GPU Programming)

- Implemented an efficient Histogram algorithm using privatization technique for array of integers. 4096 Histogram bins used unsigned 32-bit counters.