Ayushi Saigal
P: +16089602203 | asaigal2@wisc.edu

EDUCATION

UNIVERSITY OF WISCONSIN - MADISON Graduation: May 2025
Bachelor of Science: Electrical Engineering specialization in Machine Learning and Data Science
Minor: Computer Sciences

- **Relevant coursework :** Signal Processing, Programming in Java, Circuit Analysis, Circuits Lab, Random Signal Analysis and Statistics, Electronic Circuits,Signals and System, Linear Algebra,

TECHNICAL EXPERIENCE

BENNETT COLEMAN Delhi, IN
Data Science and Analysis Intern *May 2024-Present*

- Working in the Business Intelligence team, **developed advanced Python scripts** to automate the collection and preprocessing of large datasets, achieving a reduction in manual labor by 75%.
- Employed **SQL and used Excel** for robust data extraction and analysis from various databases, leading to key insights and trend identification that supported strategic decision-making.
- Utilized **PowerBI for creating reports and visualizing data scraped** from websites using Selenium library.

COMPUTATIONAL OPTICS LAB UW-Madison
Machine Learning Researcher *December 2023 - May 2024*

- Developed a method for **training neural network denoisers** using only noisy data, addressing a key challenge in Fluoroscopy-Guided Surgery
- Gained practical experience in **machine learning and noise modeling**, focusing on overcoming the lack of clean ground truth data in clinical environments.
- Applied **Python, PyTorch, Tensorflow** in Linux for model implementation, enhancing skills in programming, data analysis, and innovative problem-solving in a healthcare context.

DEPARTMENT OF MATHEMATICS UW- Madison
Undergraduate Math Researcher *August 2023 - December 2023*

- Designed and implemented advanced **Python algorithms utilizing NumPy, Pandas** for analyzing various versions of the Nim game, emphasizing algorithmic efficiency and computational optimization to devise effective strategies.
- Specialized **in pattern recognition** within game strategies, enhancing insights through data visualization tools with a team of five.
- Optimized existing codebase, resulting in a significant performance enhancement, which accelerated the code's execution speed and improved efficiency

UW Hospital Madison, WI
Image Processing Summer Intern *June 2023 - September 2023*

- Utilized **advanced MATLAB** techniques work on the optimization and comprehensive analysis of images, significantly enhancing the precision and effectiveness of research initiatives.
- Pioneered the development of sophisticated algorithms and scripts, playing a critical role in facilitating the seamless processing and **interpretation of large data sets**, a pivotal component in advancing modern analytical research methodology.
- Used machine learning techniques like linear regression, exponential smoothing, support vector machine, k-means clustering

LEADERSHIP EXPERIENCE

SOCIETY OF WOMEN ENGINEERS
Vice President Of Internal Relations

- Oversee internal communications and collaboration among SWE members, ensuring effective engagement.
- Coordinate attendance, travel logistics, and funding for WE and WE Local conferences, enhancing member participation and professional development.

COLLEGE OF ENGINEERING
Student Ambassador

- Led groups of up to 30 prospective students and families on hour-long tours of campus facilities
- Communicated the value of a UW-Madison education to families, leading them to enroll their students at the university.

WISCONSIN UNION

Event Manager

- Entrusted with the managerial responsibility for all three union buildings, ensuring efficient day-to-day operations.
- Utilized project management skills in team-setting to handle event schedules, technical and customer requirements.

PROJECT EXPERIENCE

PACEMAKER (Electrical Engineering Project)

- Developed a pacemaker prototype using a microcontroller system assembled on a breadboard.
- Utilized fundamental electrical systems to create a realistic simulation of a patient's heart rate, enhancing the accuracy and effectiveness of the device.

GUITAR EFFECTS (Real Time DSP Project)

- Developed audio processing effects in C/C++ using Code Composer Studio for a real-time DSP final project.
- Implemented a delay + echo effect using an ISR-based approach with an IIR comb filter, enhancing audio depth by adding decaying repetitions.
- Created a flanging effect utilizing an FIR filter and a cosine table for sinusoidal delay variation, producing a distinctive whooshing sound.
- Designed a chorus effect by dynamically calculating delayed indices and mixing multiple delayed samples with specific gains to simulate the sound of multiple instruments or voices.

CUSTOMER CHURN ANALYSIS (Python Project)

- Analyzed customer data to predict and reduce churn using Python and machine learning techniques.
- Developed predictive models and provided actionable insights to optimize customer retention strategies.

TECHNICAL PROFICIENCIES

Skills: Microsoft Office (Excel, Word, PowerPoint), Python, Java, JavaScript, HTML, CSS, Tableau, MATLAB, SolidWorks, MySQL,Salesforce(Deloitte's National Bootcamp for selected students), C#, Power BI