Aditi Dewangan

aditishreydewangan@gmail.com | (206) 313 – 7980 | linkedin.com/in/aditi-s-dewangan

EDUCATION

University of Washington, Seattle *Expected Jun 2028*

Bachelor of Science, Computer Science | Minor: Business Entrepreneurship

Technical Coursework: Software Design, Data Structures, Algorithms, Computer Architecture

Activities: Lavin Entrepreneurship Program, Women in Computing (Officer), COM^2 (Fundraising Officer)

EXPERIENCE

Laboratory for Auditory Neuroscience and Development Seattle, WA

Undergraduate Research Assistant - Engineering *Jun 2022- Present*

- Developed and optimized MATLAB and Python scripts for EEG signal processing and acoustic data analysis
- Analyzed large-scale EEG and audio datasets in studies on auditory processing (PitchMMN, MultiIDS) for over 100 infants (ages 7 – 11 months), contributing to algorithmic modeling and research publications
- Leveraged Kaldi ASR framework via Montreal Forced Aligner to produce time-aligned phoneme transcriptions, integrating linguistic data into analysis pipelines on 100% of MultiIDS conditions

STEM for Others Seattle, WA

Software Developer *Jun 2025 – Sep 2025*

- Contributed to iOS and frontend development for STEMplore, an educational app for increasing STEM learning for over 11,500 + students with over 130 programs and 35 courses and volunteer involvement of over 700 participants
- Developed cross-platform features using Swift for iOS and Next.js, React, and Tailwind CSS for the web interface
- Collaborated on UI/UX improvements and feature expansion to enhance interactivity across devices

Sensoria Health Redmond, WA

Software Engineer Intern *Oct 2024 – Jun 2025*

- Developed and prototyped wearable IoT devices (smart socks/boots) with textile pressure sensors, 9-axis IMUs, and BLE-enabled Core microelectronics for real-time gait monitoring designed for patient monitoring
- Calibrated sensor circuitry and optimized analog-to-digital signal flow of over 100,000 data points to ensure reliable Bluetooth communication to Sensoria's mobile app for AI powered rehabilitation insights
- Validated device performance with pressure testing, troubleshooting I²C/SPI data and improving hardware

PROJECTS

Mondrian Art Generator using Recursive Partitioning

- Built a recursive image-partitioning algorithm to generate Mondrian-style artwork by subdividing canvases based on size thresholds and aspect ratios handling hundreds of recursive calls per render
- Increased visual coherence by weighting color selection probabilities per quadrant while ensuring termination and balance through minimum region constraints and test cases for edge canvas sizes and extreme aspect ratios

Disaster Relief Resource Allocator using Optimization

- Implemented a recursive backtracking algorithm to maximize total population served under strict budget constraints across multiple regions with correctness validated by targeted test cases including worst-case inputs
- Reduced effective search space by 60% using pruning and early termination, improving runtime from exponential brute force to tractable performance on inputs of up to 15 regions

Mini-Git – Version Control System Prototype

- Built a version control system supporting commit creation, history traversal, and repository state tracking
- Developed 15+ unit tests ensuring robustness across edge cases using custom linked data structures in O(n) time

TECHNICAL SKILLS

Languages: Java, C++, Python, Swift

Cloud: Amazon Web Services, Google Cloud Platform, Azure

Tools: Git/GitHub, Visual Studio Code, Eclipse IDE, MATLAB

Frameworks & Libraries: Kaldi, NumPy, Node.js, Next.js, React, Tailwind CSS