AISWARYA JAYACHANDRAN

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EDUCATION

Georgia Institute of Technology, Atlanta, United States **Aug 2025 - May 2027**

Master of Science in Computer Science, Computing Systems **GPA: 4.0/4.0**

Related Coursework: Data Visualization and Analytics, Computer Networks, High Performance Computer Architecture

Govt. Model Engineering College, Kerala, India **Aug 2018 - Jun 2022**

Bachelor of Technology in Computer Science and Engineering **GPA: 9.1/10**

Related Coursework: Data Structures and Algorithms, Operating Systems, Machine Learning, Distributed Computing, Systems, Cloud Computing, Computer System Architecture

TECHNICAL SKILLS

Programming Languages	C/C++, JavaScript, Python, TCL
Frameworks/Libraries	Django, NodeJS, ExpressJS
Databases	MySQL, MongoDB, PostgreSQL, SQLite
Tools/Platforms	GNU Debugger, Git, Perforce, AWS, GitHub
Operating Systems	Windows, Linux, Mac OS
Web Technologies	HTML/CSS, Bootstrap, REST API, ReactJS

PROFESSIONAL EXPERIENCE

Synopsys Inc. **Jan 2025 - Aug 2025**

Senior Research and Development Engineer Bangalore, India

- Upgraded name-mapping capabilities, improving the correlation accuracy by 20% between diverse simulation signals and design signals in more than 10 complex simulation environments
- Authored and maintained over 100 comprehensive regression test suites using **TCL** scripting, ensuring consistent and reliable tool performance across 20+ unique scenarios
- Orchestrated 3 seamless migrations between VERDI tool versions, coordinating with 2 cross-functional teams to minimize downtime and maintain productivity
- Served as the primary technical point of contact for a key customer, resolving critical migration issues within one week of tool version upgrade, leading to smooth transition and satisfaction with the new tool capabilities
- Leveraged **GDB (GNU Debugger)** to analyse and resolve over 100 complex software defects, enabling precise identification and rectification of issues

Synopsys Inc. **Jul 2022 - Dec 2024**

Research and Development Engineer Bangalore, India

- Implemented advanced features such as power annotation for the PrimePower tool using **C/C++,** incorporating algorithms that improved performance and functionality for precise power analysis and optimization in IC designs
- Enhanced concurrent and distributed analysis capabilities to improve efficiency in managing large-scale IC designs, resolving customer-reported issues and ensuring reliable performance of the tool

Aarna Analytics **Aug 2020 - Feb 2021**

Frontend Developer Intern Texas, USA (Remote)

- Created a custom **CRM application** using **React** and **Express.js** for home chefs to manage inventory and orders, gaining hands-on experience in front-end development
- Designed and implemented the webpage for Profitis, an AI-powered prediction engine and assisted in debugging and resolving critical code issues within the user authentication module

ACADEMIC PROJECTS

Interactive Natural Hazard Risk Assessment Dashboard

- Built an interactive geospatial dashboard to analyse U.S. natural hazard risks by integrating NOAA climate data and FEMA National Risk Index, including an embedded chatbot for risk interpretation and exploratory queries
- Developed machine-learning regression models (**Linear Regression, ElasticNet, Random Forest**) to predict fatalities and economic loss**,** using **SHAP** for feature attribution and risk-driver analysis at regional and county levels
- Designed **multi-layer visual analytics** (**choropleth maps, risk quadrants, drill-downs**) enabling comparison of exposure, vulnerability, and resilience metrics for decision-making

Heat Diffusion Simulator Graphical User Interface

- Developed a real-time **2D heat diffusion** simulation and visualization tool using **React, TypeScript, and HTML5 Canvas**, enabling interactive exploration of temperature propagation across a grid
- Implemented a region/material editor (rectangle and ellipse drawing tools) to assign different thermal properties and evaluate multi-material diffusion scenarios
- Added support for configurable boundary conditions (per-edge temperature settings) and **simulation controls** (play/pause/scrub) with **summary statistics/trends** to aid analysis and debugging

LEADERSHIP & ACTIVITIES

- Mentored 12 students in grades 7-12 for IBETO Junior 2022, an innovation competition hosted by Govt. Model Engineering College, providing hands-on training in **Python** and **Django**, which led to submission of 3 innovative projects
- Awarded full tuition waiver with a monthly stipend and Teaching Assistantship for Spring 2026 at Georgia Tech