Manish R Venumuddula

Software Engineer & Climate Scientist

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Creative and highly-analytical individual currently pursuing BSE in Computer and Climate Science with proven capacity for designing and coding the right solutions starting with broadly defined problems. Extensive knowledge of Computer Programming, Data Ingestion & Processing, and Hydrology Models. Talented for maintaining strong object-oriented and software architecture fundamentals and coding standards. Knowledgeable in optimizing performance, scalability, and code of websites and software.

- Adept at prioritizing and allocating important tasks and ensuring completion under strict deadlines.
- Capable of managing entry-level software development projects from conception to completion.
- Equipped with excellent debugging, critical thinking, analytical, problem-solving, and time management skills.

Technical Proficiencies

Languages:	C++, Python, R, Java, SQL, C#
Platforms & Tools:	AWS Lambda, Glue, Kinesis, VSCode, RStudio, GitHub, Unity, PyCharm, Eclipse, Anaconda, Git, Linux
Areas of Expertise:	Software Development on Cloud, Research & Development, Data Visualization, Agile Software Development Cycle, Team Building & Collaboration, Testing & Troubleshooting, Documentation & Reporting

Education

BSE in Climate Science, BSE in Computer Science (GPA: 3.8), June 2020 – April 2024

University of Michigan, Ann Arbor, MI

Key Modules: Operating Systems, Programming and Data Structures, Climate Modeling, Geophysical Fluid Dynamics, Climate Physics, Climate Change, Data Structures and Algorithms, Computer Organization, Calculus up to Diff Eq., Linear Algebra, High-Level Probability and Statistic Courses, Database Management, Atmospheric Thermodynamics, and Earth System Analysis and Evolution.

Key Projects & Achievements

- Operating as the scientific programmer of a team setting up the Large Lake Statistical Water Balance Model to resimulate water levels on Mono Lake, CA to provide a basis for forecasting and analysis for interested government and academic parties
- Performing skill analysis on ice cover models (Beta Regression & Cox Proportional Hazards) to improve & validate ice onset predictions in Lake Superior, with an accepted paper in Earth and Space Science (http://dx.doi.org/10.1029/2024EA003845)

Career Experience

NOAA Internship, National Weather Service – Office of Central Processing — **Jun 2023 – August 2023**

Software Intern

Integrated new products into menus of the largest hydrometeorology data visualizer and forecast editor (AWIPS) to increase forecaster awareness. Notable achievements include successfully incorporating products from the Storm Prediction Center and NOAA Labs.

- Integrated multiple products into the AWIPS Visualization framework, enhancing usability and functionality for NWS Weather Forecasters
- Streamlined the onboarding process for new AWIPS developers through online guides

Elevance Health (Formerly Anthem) – IngenioRX — **Jun 2022 – August 2022**

Software Intern

Use AWS Lambda, Glue, and Kinesis Data Streams to form a data pipeline transferring medical records between Data Lakes to calculate internal metrics. Worked closely with developers and testers on a 20-person scrum team

- Wrote consumer code to create a data pipeline to transfer millions of medical records within a set time period
- Wrote high-performance, scalable producer code in AWS Glue to transfer tables of varying sizes through AWS Kinesis

University of Michigan – SEAS, Ann Arbor, MI — **2020 – Present**

Research Member

Use survival models & beta regression in R to predict ice cover around the Apostle Islands in Lake Superior. Led, trained, and motivated a group of students to facilitate the professor with publishing a paper.

- Prepared and presented research findings to a large group of peers, with a paper close to journal submission
- Better described ice cover changes over a 50-year period by using local variables and global variables with a split-period model

Academic Achievements, Memberships & Campus Involvements

Dean's Honor List | Michigan Eco Data Club | Michigan Marching Band Member | University of Michigan Science Olympiad External Vice President