Sivapriya Gopi

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Education

University of Minnesota, Twin Cities,	**Sep 2024 – Dec 2025**
Master of Science in Computer Science—GPA: 3.9/4	*Minnesota, USA*
SRM Institute of Science and Technology, SRM University,	**Aug 2020 – May 2024**
Bachelor of Technology in Computer Science and Engineering—GPA: 9.59/10	*Chennai, India*

Experience

University of Minnesota, MN, US — Graduate Research Assistant,   **Dec 2024 – Present**
CE-STAND - Clinical Data Analysis | Software Setup & Support | Research Ops

- Collaborated with neurosurgeons and biomedical researchers on a **$400K grant**-funded protocol, collecting and organizing clinical data from **20+ patients** with neurogenic damage.
- Designed **Python** and **MATLAB**-based applications to analyze and manage patient data, producing clear, insight-driven outputs via **PowerBI** and **Excel**-based visualizations.
- Created structured work products including documentation, dashboards, and written reports tailored for varying stakeholders across medical and research teams.
- Developed secure, scalable **SQL**-based data pipelines for **30+ patient datasets**, ensuring data compliance and rational decision-making based on structured facts.
- Demonstrated flexibility by supporting research activities outside traditional hours and adapting to dynamic clinical environments.
- Initiated independent research tasks in a complex, fast-paced clinical setting, consistently meeting deliverables without supervision.

Softlogic Systems, Chennai, India — Software Development Intern,   **Jun 2023 – Sep 2023**
Payroll System Development | Backend Engineering | Client-Facing SDLC

- Contributed to the complete project lifecycle, from proposal to deployment, working autonomously to meet tight deadlines.
- Built scalable payroll systems for **5 clients** across diverse industries, supporting 250+ employees at each organization.
- Developed backend services using **Java, Spring Boot,** and **SQL**; designed **RESTful APIs** and implemented **OAuth 2.0** for secure access control.
- Reduced system response time by **30%** through performance tuning and query optimization, supporting data-driven business ops.

Key Projects

Stock Sentiment Analysis – The Social Media Effect | *Svelte, BERT, Python, NLP, Data Viz*   **Jan 2025 – May 2025**
- Analyzed **50K+ tweets** and stock prices using **BERT**-based **NLP, Granger causality,** and **lag correlation** technique.
- Found short-term sentiment influence on trading volume and volatility for 11 top US stocks using **Python** and **Pandas.**
- Built a **Svelte**-based interactive dashboard for data storytelling and trend visualization.

Intruder Escape, An AI-Driven Pursuit-Evasion Game | *Python, Pygame, A*Pathfinding, UCS*   **Sep 2024 – Dec 2024**
- Developed a grid-based **AI** game simulating pursuit-evasion using **A*** and **UCS algorithms**; reduced node exploration by **4.43x.**
- Implemented dynamic obstacle generation and a difficulty scaler to increase robot speed and challenge with real-time triggers.
- Enhanced AI responsiveness and computational efficiency within **1 week** using procedural logic and game state tuning.

News Headline Classification model | *Python, Pandas, Scikit-learn, Machine Learning*   **Jan 2024 – May 2024**
- Processed **10K+** news headlines with **tokenization** and **vectorization** and trained models using **SVM** and **Logistic Regression**.
- Integrated a pattern-learning algorithm, improving classification accuracy to **87%** across multi-label categories.
- Completed entire ML pipeline in **4 months**, aligning with protocol goals and meeting all 10 targeted objectives.

Crime Prediction and Analysis | *Python, Pandas, Random Forest, Gradient Boosting*   **Aug 2023 – Dec 2023**
- Spearheaded a **predictive crime model** using **Data Mining** and **Machine Learning**, achieving an accuracy rate of **91%**.
- Processed **8,000+** crime records from **Kaggle**, employing **Random Forest** and **Gradient Boosting** to predict crime occurrences.
- Designed a **Python**-based visualization module displaying crime intensity levels through **bar charts and maps**, empowering law enforcement with actionable insights.

Technical Skills

- **Languages:** Python, SQL, Java, MATLAB, C++
- **Libraries:** Pandas, NumPy, SQLAlchemy, Pygame, Scikit-learn
- **Frameworks:** PyTorch, TensorFlow, Spring Boot, Svelte
- **Developer Tools:** Figma, Power BI, MySQL Workbench, StarUML, Zoho Creator, Eclipse IDE, MATLAB
- **Operating Systems:** Windows, MacOS, Linux
- **Relevant Fields:** Gen AI, Artificial Intelligence, Machine Learning, Data Science, Software Development, Database Systems, Data Analytics, UI/UX
- **Methodologies & Concepts:** RESTful APIs, OAuth 2.0, Microservices, Agile
- **Algorithms & Specialized Skills:** A* Pathfinding, Gradient Boosting, Random Forest, SVM, Logistic Regression, Data Mining, Data Cleaning & Transformation, Visualization , Predictive Modeling, Heuristic Functions, Software Design