# Madhuri Sharma

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## SUMMARY

Results-driven Software Engineer with expertise in AI/ML, AR/VR, Cloud Computing, and Mobile Application Development. Proven ability to design, develop, and deploy scalable, high-performance solutions enhancing user experience and improving operational efficiency. Strong foundation in Computer Science, with advanced skills in Python, C++, C#, SQL, Flutter, and Cloud Platforms (AWS, GCP, Azure). Adept at applying research to real-world applications, driving innovation, and collaborating with cross-functional teams in fast-paced environments. Committed to using technical expertise in delivering mission-driven, next-generation software solutions. Strong advocate for digital literacy, ethics in technology, equality in STEM, and empowering people to build community through technology.

## TECHNICAL SKILLS

**Programming Languages**: Python, C, C++, Java, C#, SQL, Dart, HTML/CSS, Node.js
**AI/ML**: TensorFlow, PyTorch, scikit-learn, NumPy, Pandas, LLM, RAG, ML, DL, NLP, AI Agents
**Technologies**: Git, Docker, AWS, GCP, Azure, Linux, Windows, Microsoft Office, MongoDB, Gerrit, JIRA, Flutter
**Software Engineering**: Design Principles, Version Control, Code Review & Debugging, Testing, SCRUM
**AR/VR & Graphics**: Unity2D, Unity3D, Meta Quest SDK, Grokit Core, CGI Studio, YOLOv8, BlazePose

## SUMMARY OF TECHNICAL SKILLS

- Full-Stack Development
- Microservices Architecture
- Performance Optimization
- Containerization & Orchestration
- Testing & Quality Assurance
- Database Design & Administration
- DevOps & CI/CD
- Version Control & Collaboration
- Security Engineering
- API Integration & Development
- Data Engineering & ETL Pipelines
- Networking Solutions Development
- Data Visualization & Reporting
- Agile & Scrum Methodologies
- Machine Learning & AI Integration
- AR/VR Design and Development

## PROFESSIONAL EXPERIENCE

**AI Engineer Intern** — **Jun 2025 - Present**
**Clear Current** — **Remote (USA)**

- Develop and automate end-to-end Python/MongoDB data pipelines for large-scale energy invoice validation, driving measurable improvements in operational efficiency and accuracy.
- Evaluate, benchmark, and fine-tune multiple large language models (LLMs), finding the most cost-effective architectures for agentic AI workflows, and improving overall system performance, scalability, and cost optimization.
- Synthesize datasets using advanced Python libraries to simulate realistic energy consumption invoices, improving the robustness of workflow validation, testing, and model training pipelines.
- Collaborate with cross-functional teams (software engineers, data scientists, product managers) to integrate AI-driven solutions into enterprise platforms: seamless deployment, adoption, and alignment with strategic business objectives.
- Author comprehensive technical documentation and deliver knowledge transfer sessions, promoting standardized practices, knowledge retention, and widespread adoption of AI-based processes across engineering and business units.
- Leverage cloud-based platforms (AWS, GCP, Azure) to develop, deploy, and scale AI/ML solutions, reinforcing system reliability, adherence to industry best practices, and compliance with security and performance standards.

**Senior Software Engineer** — **Aug 2016 – Dec 2021**
**Bosch Global Software Technologies** — **Bengaluru, India**

- Developed advanced infotainment features including dynamic routing and rerouting using C++ on embedded Linux platforms, enhancing navigation accuracy and cutting route recalculation time by 81%.
- Directed and conducted Gerrit code review sessions for a team of 8 engineers, using memory-safe C++ design patterns and rigorous quality standards, reducing production defects by 70%.
- Engineered and optimized core algorithms to reduce CPU and memory utilization, improving response times, system stability, and performance across large-scale embedded systems.

- Collaborated with multidisciplinary teams (product management, integration, and quality assurance) to deliver high-quality software features on time and within scope, aligning with client and business requirements.
- Mentored and trained junior developers, providing guidance on debugging practices, embedded systems development, and coding standards, improving team capability and accelerated project delivery timelines.
- Contributed to the full software development lifecycle (SDLC) including requirements gathering, architectural design, implementation, integration, and deployment, delivering high-performance, production-ready solutions.

## RESEARCH EXPERIENCE

**AR/VR Research Assistant** **Mar 2024 – Jun 2025**
**Healthcare Innovation & Design Lab** **Santa Clara University**

- Developed VR and neurofeedback projects ("Mandala Flow State," "Fabled Forest"), integrating biofeedback and gesture-based input for apps to boost mindfulness and stress management.
- Presented research at the MeaningfulXR Conference 2025 (UC Davis) and won 2nd place in the Child Mind Institute's 10-Minute Challenge for a GenAI digital intervention.
- Authored technical documentation; translated EEG signal-processing concepts to non-technical stakeholders.

## PROJECTS

**Voxure: The Multimodal GenAI Vocal Coach** **Apr 2025 - Present**

- Developed cross-platform Flutter application using Computer Vision, LLMs, and Retrieval-augmented Generation (RAG) to deliver real-time multimodal vocal coaching.
- Optimized PyTorch models to achieve 90–95% accuracy in posture and voice evaluation.

**Odyssey: The Mobile App for Solo Travelers** **Sept 2024 - Dec 2024**

- Created the "Connect" module of a cross-platform mobile application enabling users to discover destinations, connect with fellow travelers, share reviews and safety tips.
- Optimized sorting algorithms and applied design principles to produce maintainable, scalable and efficient code.

**Abstractive Summarization of News Articles** **Apr 2024 - Jul 2024**

- Fine-tuned HuggingFace transformer models (BART, Pegasus, Marian) to generate abstractive summaries of long-form news articles, improving ROUGE scores (38–800%) and BLEU scores (97–515%).
- Researched, implemented, and evaluated advanced neural network optimization techniques and performance metrics to enhance model accuracy, efficiency, and scalability.

**Secure P2P Storage Component for OpenStack** **Apr 2024 - Jul 2024**

- Created P2P-based architecture for OpenStack's storage component, with an extra layer using the Sechord algorithm for handling security issues, achieving a highly efficient, secure, and reliable performance,
- File transfer and upload/download times improved by 80%, in addition to quick detection of suspicious activity.

## EDUCATION

**Santa Clara University** Santa Clara, CA
**M.S. in Computer Science and Engineering** Sep 2023 - Jun 2025
GPA: 3.61

- Relevant Coursework: Data Structures & Algorithms, Advanced OS, Cloud Computing, Mobile App Development, ML/DL, NLP, HCI, AI & Ethics

## CERTIFICATIONS

- AWS Certified AI Practitioner (2025)

## LEADERSHIP & COMMUNITY

- Active participant in coding competitions (Kaggle, Devpost) focused on AI/ML, AR/VR and Data Science.
- Member of "Rewriting the Code", advancing and collaborating with women in technology.
- Volunteered as a tutor in Computer Science for underprivileged children in Indian schools.
- Passionate about building immersive AR/VR experiences, and AI/ML apps, with a global reach: especially in healthcare, education, environment, gaming, fine arts & performing arts.