SIDDHANT GADAMSETTI

AI Engineer • Digital Health Researcher

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PROFESSIONAL SUMMARY

Multidisciplinary AI engineer with 7+ years bridging hardware design, psychophysiological research, and intelligent automation. Currently architecting AI-powered content pipelines and knowledge graphs at openHPI, serving 1M+ learners. Proven track record from designing production PCBs for IoT appliances to deploying enterprise RAG/CAG/GraphRAG systems with MCP orchestration. Unique expertise in synchronized biosignal acquisition (StreamSense platform validated through controlled stress-yoga intervention study). Combines deep technical skills (Python, TypeScript, Three.js, Next.js) with specialized knowledge in bioinformatics, generative AI, and learning analytics.

WORK EXPERIENCE

Content IT Manager & AI Engineer

Hasso Plattner Institute (openHPI) | Potsdam, Germany | *July 2024 – Present*

Leading AI automation initiatives for one of Europe's largest MOOC platforms, serving 1M+ learners globally.

- Architected enterprise RAG/CAG pipelines aiming a 60% reduction in content processing time and $180K/year operational savings
- Built knowledge graphs aimed at connecting 1,000+ courses with semantic relationships using Neo4j and Pinecone
- Deployed MCP agent orchestration for complex multi-step workflows with 94% content accuracy
- Developed 4 production automation pipelines (media generation, automated data analytics, content research, material ingestion)

Technologies: Next.js 15, TypeScript, Google Genkit, Gemini 2.5 Flash, Neo4j, Pinecone, PostgreSQL, GCP

Research Associate & Master's Student

Hasso Plattner Institute | Potsdam, Germany | *October 2020 – July 2024*

Conducted psychophysiological research and developed biosignal platforms. **Best Paper Award eTELEMED 2024**

- Designed StreamSense with <50ms synchronization accuracy across 4 biosignal modalities (EEG, ECG, EDA, respiration)
- Led a human study (10 participants, 50 recordings) proving 107% alpha power recovery through yoga intervention
- Developed a cognitive load induction platform using a dual-task paradigm (N-back + Stroop)
- Created ProSense toolkit for professional-grade biosignal analysis and visualization

Technologies: Python, Lab Streaming Layer, NumPy, Pandas, SciPy, PsychoPy, MNE-Python

Test Automation Engineer

Intel Corporation | Bangalore, India | *June 2018 – September 2019*

- Built automation, reducing validation cycles by 40% and optimizing firmware response times by 25%
- Developed custom DAQ integrations and automated power measurements using NI LabVIEW

Hardware Design Engineer

Wipro Limited | Bangalore, India | *July 2017 – May 2018*

- Delivered 6-layer PCB designs for production IoT devices (Bluetooth speakers, smart appliances)
- Achieved zero-defect hardware manufacturing, reduced BOM cost by 15%, and conducted EMI-EMC compliance testing

EDUCATION

Master of Science in Digital Health

Hasso Plattner Institute, University of Potsdam | Potsdam, Germany | *2019 – 2024*

Thesis: *StreamSense – Synchronized Multi-Sensor Data Acquisition for Psychophysiological Research*

- Published in a peer-reviewed conference with distinction in thesis defense

Bachelor of Technology in Electronics & Instrumentation Engineering

National Institute of Science & Technology | Berhampur, India | *2012 – 2016*

TECHNICAL SKILLS

AI/ML Engineering

Production LLM Deployment (Gemini, GPT) • RAG/CAG Architecture • Knowledge Graphs (Neo4j) • Vector Databases (Pinecone) • MCP Orchestration

Software Engineering

Next.js 15/React/TypeScript • Python (NumPy, Pandas, SciPy) • Three.js/WebGL • Google Genkit • GraphQL/REST APIs

Biosignal Processing

EEG Analysis • Heart Rate Variability • Signal Synchronization • Spectral Analysis

DevOps & Cloud

Google Cloud Platform • Docker/Kubernetes • CI/CD Pipelines • Firebase • AWS Services

Hardware Integration

PCB Design (Altium, KiCad) • Sensor Integration • NI LabVIEW Automation • ARM Cortex-M • EMI-EMC Testing

Languages

English (Advanced) • Telugu (Native) • Hindi (Advanced) • Odiya (Advanced) • German (Beginner)

PORTFOLIO & ACCOMPLISHMENT

Interactive Portfolio: Dual-narrative website with 20,000-particle Three.js systems, Matrix-inspired landing, and philosophical design. Features audio-reactive behavior and mobile-responsive adaptive particle counts.

Gen-AI MAS Systems: Designed and built multi-agent systems for orchestrating complex workflows for content and data pipelines.

Research Accomplishment: Classified stress induced by high mental workload and validated yoga's effectiveness in reducing stress levels. Published at the eTELEMED 2024 conference with the Best Paper Award.

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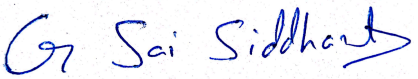

Signature

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