SAMBARTA RAY

Tempe, AZ | sambarta1202@outlook.com | www.linkedin.com/in/sambarta-ray |

SUMMARY

Applied Research Scientist specializing in machine learning, wearble robotics, and product development, with 5+ years of experience with start-up, R&D, prototyping, and industry. Proven track record in developing AI-enabled systems from concept to prototype, securing multi-million-dollar grants, startup competitions like MassChallenge and contributing to patent-pending innovations. Experienced in wearable robotics, sensor development, prototyping, and embedded systems for real-world contextual AI applications.

TECHNICAL SKILLS

Programming Languages: Python, C/C++, Java, MATLAB, SQL, JavaScript
ML/DL: Deep Learning, TensorFlow, PyTorch, Keras, Scikit-learn, Feature Engineering, Transfer Learning
Perception & Robotics: 2D/3D Perception, ROS, Gazebo, PCL, TurtleBot, Arduino, Universal Robot Arm
Cloud & Tools: AWS, GCP, SageMaker, Cloud ML, Heroku, Git
Specialized Areas: Generative AI, Computer Vision, NLP, Signal Processing, Embedded Systems

PROFESSIONAL EXPERIENCE

Machine Learning Engineer & Data Scientist | Manus Robotics, Lexington, MA | *Dec 2020 – Present*

- Led development of multimodal muscle activity sensing technology for assistive robotics, improving contextual AI understanding of human intent.
- Key contributor to securing NSF SBIR Phase II award worth $1M to advance wearable gesture recognition technology to 30 million differently abled survivors of stroke, SCI and TBI around the globe. Key contributor to securing NSF TECP grant worth $250K and finishing work for NSF SBIR Phase I award worth $250K.
- Secured finalist place in 2021 MassChallenge cohort.
- Co-inventor of patent-pending gesture detection algorithm for real-time, always-on AI applications.
- Collaborated with cross-functional teams including hardware engineers, data scientists, and product managers to deliver functional prototypes.
- Presented research and prototypes at MIT Digital Technology & Strategy Conference, MIT R&D Conference, and MIT Startup Ecosystem Conference.

Graduate Researcher & Software Engineer | Arizona State University, Tempe, AZ | Jan 2019 – Nov 2020

- Led team of 15 people analyzing EMG data for fall prevention research in neuro-muscular conditions, integrating embedded systems with AI analytics.
- Developed Android application enabling remote data collection during COVID-19, securing $20K grant and ensuring research continuity.
- Engineered ankle-foot robotic orthosis with pneumatic actuators, wearable IMU-based trip detection, and custom control algorithms.
- Presented work at BRAIN Center annual IAB meeting.

- Software Development Engineer | Tata Consultancy Services, Chennai, India | Sep 2016 – Jun 2018
  - Developed and maintained critical banking software; reduced defects by 65% and delivered features 3 months ahead of schedule, saving $700K.
  - Conducted corporate training for 20 associates in coding best practices, project management, and agile delivery.

EDUCATION

- Master of Science (Thesis), Electrical Engineering – Arizona State University, Tempe, AZ (Aug 2018 – Aug 2020)
- Bachelor of Technology, Electronics and Communication Engineering – Heritage Institute of Technology, Kolkata, India (Aug 2012 – Jun 2016)

Personal website

- https://srayhit.github.io/Resume-Website/