# Gangadhara Naga Sai

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I am a PhD student (Graduating March 2026) in Ogata Laboratory at Waseda University, focused on Physical AI and soft robotics. I build robots and run end-to-end experiments, and I use my 3.5 years of software engineering and technical leadership experience to improve and deploy state-of-the-art learning models for human-robot collaboration, aiming for reliable, transparent operation in real human environments.

## CERTIFICATIONS & AWARDS

- LeRobot Worldwide Hackathon **first place in Asia Pacific**. Vision Language Action model demo on SO ARM101 (2025).
  - Our project "Circuit Robot" uses an SO-ARM101 robotic arm to make real circuit connections and bring them to life.
  - Trained ACT and Diffusion policy models on each task separately. Then fine-tuned the SmolVLA pretrained model using the same data. All winners , Open source dataset,- LinkedIn post
- AWS AI Agent Hackathon Tokyo **first place** (2025).
  - When a new calendar event is created or updated, the agent automatically creates Buffer Time based on your location and the next event location to help you better manage your time.
  - Time is the most valuable resource, and attention is our currency. Our AI agent helps optimize your time so you can spend it with family and friends. - LinkedIn post
- **MEXT Scholarship (2021 - 2026)**
  Awarded by the Government of Japan through the Embassy of Japan in India. In 2021, I was selected as one of the few robotics scholars. The scholarship covers full tuition (master's + PhD), monthly stipend, and round-trip airfare.
- **Udacity Data Analyst Nanodegree**
  Completed real-world data wrangling, statistics, and project evaluation tasks using Python.
- **IBM Applied AI Professional Certificate (2018)**
  Completed the IBM Applied AI Certificate. Learned to build AI apps and chatbots using IBM Watson, cloud APIs, and Python.

## EXPERIENCE

**R&D Intern , Soft Robotics Automation** Aug 2025 to Present
Omron SinicX, Tokyo

- Soft-robot manipulation in confined, controlled spaces; hardware is set up, and a control stack with learning methods. Focus is on safe, repeatable motion for simple tasks in tight environments.

**Computer Vision Intern , Tackling labor shortages** 2024
Finger Vision, Tokyo

- Achieved 95% accuracy using YOLO for foreign object recognition. Built a Mask R CNN pipeline for food recognition in clutter. Built a ROS1 UR5 pick and place system using Intel RealSense depth and a CV model to localize bowls and control a SCHUNK parallel gripper.

**Robotics Intern , TMotor CAN Bus Control in Unity** 2023
Hatsumuv Corp., Tokyo

- Implemented TMotor API in Unity C# over CAN for position, velocity, and torque control. Tuned KP and KD. Verified performance on a torso prototype with a 65 Nm actuator.

**Software Engineer - Technical Lead** 2017 to 2020
Capgemini India Ltd.

- Software Trainer Bot using AWS Lex for a large furniture retailer. End to end build with Python and Node, EC2, S3, and a dynamic UI for user progress.
- Voice Assistant using Google Dialogflow. Integrations with Google Home and Amazon Alexa. Team delivery and pull request reviews. Built for one of the Largest Tire retailers in N.A. It is showcased in the Google Cloud Next '19 Talk.

## PROJECTS

**"Circuit Robot" - Vision Language Action Model**

- SO ARM101 robotic arm for alligator clip placement and battery placement.
- Collected about 35 trials per task. Trained ACT models per task. Fine-tuned SmolVLA on the combined data.
- Contributed an Open Source dataset for circuit connection with Angle, current, and image time series data of about 150 trials.Open source dataset , Linkedn Post

**Design and Control of Safe Collaborative Soft Inflatable Robot with Deep Learning**

- Designed a 3DOF inflatable robot with a unique soft body and rigid joint construction, enabling safe human-robot interaction.
- Developed a leader-follower teleoperation system where a smaller robot received angle orientation directly from the user.
- Utilized Convolutional Autoencoders (CAEs) with Long Short-Term Memory (LSTM) models for motion generation in wiping tasks.

**Real Time Fitness Tracker – Human Pose Estimation**

- Implemented Machine Learning model (movenet) to recognize athlete activity in real time using a webcam or phone, based on his/her exercise activity.
- The LSTM model was trained to classify and count repetitions of exercise performed.

## SKILLS

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| Languages | Python, JavaScript |
| Modelling / CAD | Fusion 360, SolidWorks |
| Frameworks / ML | PyTorch, OpenCV, NLP |
| Robotics Tools | ROS, Unity |
| Cloud Platforms | Amazon Web Services, Azure, Google Cloud Platform |

## PUBLICATIONS

- Gangadhara Naga Sai Gubbala, Masato Nagashima, Hiroki Mori, Young Ah Seong, Hiroki Sato, Ryuma Niiyama, Yuki Suga, and Tetsuya Ogata: Augmenting Compliance to Motion Generation through Imitation Learning with Drop-stitch Reinforced Inflatable Arm with Rigid Joints, IEEE Robotics and Automation Letters (RA-L), accepted, July 2024, Presented at ICRA 2025, Atlanta, USA.
- Gangadhara Naga Sai Gubbala, Masato Nagashima, Hiroki Mori, Young Ah Seong, Hiroki Sato, Ryuma Niiyama, Yuki Suga, and Tetsuya Ogata: Deformation Analysis and Prediction of Drop-Stitch Reinforced Inflatable Robot Link for 1DOF and 2DOF Motion, IEEE/SICE International Symposium on System Integration (SII 2025), accepted, Munich, Germany, Jan, 2025.
- Gangadhara Naga Sai Gubbala, Hibiki Nakagawa, Hiroki Uchida, Masato Nagashima, Hiroki Mori, Young Ah Seong, Hiroki Sato, Ryuma Niiyama, Yuki Suga, Tetsuya Ogata: "Design Concept and Applications of Inflatable Robots: Single and Dual Arm with Internal Drop-Stitch Structure and Rigid Joints", IEEE SICE SII 2026.

## EDUCATION

**Doctor of Engineering, AI and Robotics** GPA 4.0/4.0
Focus: Design and Control with Deep Learning for Safe Collaborative Inflatable Robot.
Waseda University, Tokyo (MEXT Scholar) - Expected Mar 2026

**Master of Engineering, AI and Robotics** GPA 3.84/4.0
Focus: Control of Soft Inflatable Robot with Deep Learning.
Waseda University, Tokyo(MEXT Scholar) - Mar 2023

**B.Tech. Electronics & Electrical Engineering** 1st Class
NIT Calicut, India - Apr 2016

## LANGUAGES

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| English | Business(native) level | Hindi | Native level |
| Telugu | Native level | Japanese | Beginner level |

**DoB:** Feb 10 1994 - **Nationality:** Indian