

Shravan Tata Ramalingasetty

PROJECT SCIENTIST, JANELIA RESEARCH CAMPUS

Virginia, USA

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Education

EPFL (École Polytechnique Fédérale de Lausanne)

PHD, BioRob

Luasanne, Switzerland

Oct. 2016 - Jan, 2022

- "Neuromechanical modeling and simulation of multi-legged terrestrial locomotion" - **Prof Auke Ijspeert**

TU Delft (Delft University of Technology) - 8.0 (GPA)

M.SC IN MECHANICAL ENGINEERING, BIO ROBOTICS

Delft, Netherlands

Aug. 2014 - Sept. 2016

- Master Thesis : "Cerebellum Inspired Computational Models for Robot Control" - **Prof.dr.ir. P.P. Jonker**

MIT (Manipal Institute of Technology) - 9.5 (CGPA)

B.E IN MECHATRONICS ENGINEERING

Manipal, India

Aug. 2009 - May. 2013

- Bachelor Thesis : "Human Motion Analysis using Inertial Sensors" - **Dr. S.N. Omkar**

Skills

Programming C, C++, Python, MATLAB, Rust

Tools Git, LaTeX, Blender, Inkscape

Simulation tools MuJoCo, Isaac, Webots, ROS, PyBullet, V-REP, Gazebo, OpenSim

Experience

Anibody

PROJECT SCIENTIST

Janelia Research Campus, USA

2026-Current

- Developing anatomically based whole body animal simulations

Danner Lab

POST-DOCTORAL FELLOW

Drexel University, USA

2022-2026

- Developing experimentally driven neuromechanical simulations
- Understanding the interplay of sensory and central spinal networks during quadrupedal locomotion.

FARMS: Framework for Animal Robot Modeling and Simulation

CO-DEVELOPER

Open-source

2025

- Design of the framework for neuromechanical simulations (modeling, simulation and analysis pipeline)
- Developed interfaces for multiple rigid-body physics engines
- Implemented models of different muscle abstractions
- Developed a library for efficient simulation of non-spiking neural networks
- Developed a graphical user interface for simulating and analysing neuromechanical simulations

DCSC Systems and Controls, TU Delft

TEACHING ASSISTANT <CONTROL METHODS FOR ROBOTICS>

Delft, Netherlands

Feb. 2016 - May. 2016

- Design assignments for students to test different control strategies introduced during the course
- Use of MATLAB and VREP interface for simulating and control of robots
- Simulation environment for control of 8 DOF robotic Arm, R-Hex robots and Quadrotor race arena
- Assist in evaluation of student exams and assignments

DCSC Systems and Controls, TU Delft

SOFTWARE & ELECTRONICS <ZEBRO-ART : WHEN ROBOTS MEET ART >

Delft, Netherlands

Sep. 2015 - Aug. 2016

- To design R-Hex robot that can carry a statue in a dynamic office environment
- Raspberry Pi powered ROS framework for control, navigation and localization
- Challenges involve in designing robot that can co-exist in an environment with people in close proximity
- Capability to climb stairs while carrying a statue
- Use of Lidar and Depth cameras for SLAM

RENESAS Electronics Europe GmbH

Paris, France

TRAINEE <EVALUATION OF CONVOLUTION NEURAL NETWORKS FOR AUTOMOTIVE APPLICATIONS>

Sep. 2015 - Nov. 2015

- Set-Up the Caffe frame work
- Pedestrian detection using Convolution Neural Networks(CNN) based on Daimler dataset
- Adapt network configuration to increase detection rate and also meet real time requirements
- Extend detection framework using HoG based window scanning
- Extend the framework for Road Sign Classification and Detection
- Create data set for full scene semantic labeling
- CNN networks for learning pixel level semantic labeling

Multimedia Computing Group, TU Delft

Delft, Netherlands

RESEARCH ASSISTANT

Jun. 2015 - Aug. 2015

- Set-Up the experimental interface for Image aesthetics and Quality assessment experiment
- Use of psychophysics toolbox in MATLAB for interface design

Computational Intelligence Lab, Indian Institute of Science

Bangalore, India

JUNIOR RESEARCH FELLOW, DEPT. OF AEROSPACE ENGINEERING

May. 2013 - Jul. 2014

- Worked on design and analysis of lower body human exo-skeleton suit using LifeMod software and Inertial Sensors.
- Analysed Human swing phase of walking with exoskeleton using LifeMod and Inertial Sensors.
- Analysis of the dynamic visco-elastic properties of human arm-hand experienced by a martial artist while breaking a brick using lumped parameter model.
- Developed an On board (UDOO-Python) vision based Quadcopter stabilisation using Fuzzy Controller.

Computational Intelligence Lab, Indian Institute of Science

Bangalore, India

TEACHING ASSISTANT <BASICS OF DESIGN AND DEVELOPMENT OF FIXED WING RC PLANES AND QUADCOPTER'S>

Feb. 2014 - Apr. 2014

- Use of MultiWii autopilot for RC planes.
- Basics of Flying a Quadcopter.

Computational Intelligence Lab, Indian Institute of Science

Bangalore, India

PROJECT INTERN <HUMAN MOTION ANALYSIS USING INERTIAL SENSORS>, DEPT. OF AEROSPACE ENGINEERING

Dec. 2012 - May. 2013

- Exposure to Inertial measurement units for motion capture.
- Exposure to EEG sensors for capturing muscle activity.
- Digital Signal Processing tools: Short time Fourier Transform, Wigner-Ville Transform, Hilbert Huang Transform.
- Quantification of yoga postures and exercises.

Bosch Pvt. Limited

Bangalore, India

INDUSTRIAL TRAINEE, BOSCH CRDI

Jun. 2012 - Jul. 2012

- Understanding of Bosch production system, which is manifestation of Lean Manufacturing system.
- Understanding the application of Bosch Production systems in the manufacturing of PF pumps (mainly PF 51 and PF 45), exposure to pump's assembly process including testing and calibration.
- Worked on programmable logic controller for automating CRDI systems.
- Trained to operate a 6 DOF, ABB robotic arm.

Publications

Mechanisms of adaptive interlimb coordination to sudden ground loss: a neuromusculoskeletal modeling study

BioArxiv

SHINOHARA K, AMBE Y, KIM Y, MANO F, RAMALINGASETTY ST, LOCKHART AB, MARKIN SN, AUSBORN J, RYBAK IA, DANNER SM, AOI S.

2025

DOI: [doi:10.1101/2025.11.11.687930](https://doi.org/10.1101/2025.11.11.687930)

On All Fours: A 3D Framework to Study Closed-loop Control of Quadrupedal Mouse Locomotion

ALife, MIT Press

RAMALINGASETTY ST, MARKIN SN, LOCKHART AB, ARREGUIT J, SHEVTSOVA NA, IJSPEERT AJ, RYBAK IA, DANNER SM.

Jul 2024

DOI: [doi:10.1162/isal_a_00788](https://doi.org/10.1162/isal_a_00788)

FARMS: Framework for Animal and Robot Modeling and Simulation

BioArxiv

ARREGUIT J*, TATA RAMALINGASETTY S*, IJSPEERT AJ

Sep 2023

DOI: <https://doi.org/10.1101/2023.09.25.559130>

NeuroMechFly, a neuromechanical model of adult Drosophila melanogaster

Nature Methods

LOBATO-RIOS V, TATA RAMALINGASETTY S*, ÖZDİL PG*, ARREGUIT J, IJSPEERT AJ, RAMDYA P

May 2022

DOI: <https://doi.org/10.1038/s41592-022-01466-7>

A whole-body musculoskeletal model of the mouse

IEEE Access

TATA RAMALINGASETTY S, DANNER SM, ARREGUIT J, MARKIN SN, RODARIE D, KATHE C, COURTINE G, RYBAK IA, IJSPEERT AJ

Dec 2021

DOI: <https://doi.org/10.1109/ACCESS.2021.3133078>

Spatiotemporal Maps of Proprioceptive Inputs to the Cervical Spinal Cord During Three-Dimensional Reaching and Grasping

IEEE Transactions on Neural Systems and Rehabilitation Engineering

KIBLEUR P, TATA RAMALINGASETTY S, GREINER N, CONTI S, BARRA B, ZHUANG K, KAESER M, IJSPEERT A, CAPOGROSSO M

Jul 2020

DOI: <https://doi.org/10.1109/TNSRE.2020.2986491>

Computational modelling of musculoskeletal to predict the human response with exoskeleton suit

International Journal of Biomechanics and Biomedical Robotics

PADMANABHA GA, TATA RAMALINGASETTY S, VETRIVEL B, MUKHERJEE I, OMKAR SN, SIVAKUMAR R

Jul 2020

DOI: <https://doi.org/10.1504/IJBBR.2020.108441>

Experimental and Computational Study on Motor Control and Recovery After Stroke: Toward a Constructive Loop Between Experimental and Virtual Embodied Neuroscience

Frontiers in Systems Neuroscience

ALLEGRA MASCARO AL, FALOTICO E, PETKOSKI S, PASQUINI M, VANNUCCI L, TORT-COLET N, CONTI E, RESTA F, SPALLETTI C, TATA RAMALINGASETTY S, VON ARNIM A, FORMENTO E, ANGELIDIS E, BLIXHAVN CH, LEERGAARD TB, CALEO M, DESTEXHE A, IJSPEERT A, MICERA S, LASCHI C, JIRSA V, GEWALTIG M-O, PAVONE

Jul 2020

DOI: <https://doi.org/10.3389/fnsys.2020.00031>

Adaptive control for hindlimb locomotion in a simulated mouse through temporal cerebellar learning

NICE: Neuro-inspired Computational Elements

JENSEN T, TATA RAMALINGASETTY S, IJSPEERT A, TOLU S

Mar 2020

DOI: <https://doi.org/10.1145/3381755.3381761>

Scale Adaptive Object Tracker with Occlusion Handling

International Journal of Image, Graphics and Signal Processing

RAM ARAVIND K M, TATA RAMALINGASETTY S, OMKAR SN

Jul 2015

DOI: <https://doi.org/10.5815/ijigsp.2016.01.03>

Wireless Performance Evaluation Of Sun Salutation Using Body Mount Accelerometers.

International Journal of Yoga and Allied Sciences

TATA RAMALINGASETTY S, OMKAR SN

Dec 2014

Awards

- | | | |
|------|---|-------------------|
| 2023 | Fellowship , Edward Jekkal Muscular Dystrophy Research Fellowship | Philadelphia, USA |
| 2016 | Cum laude , This predicate is meant for the fastest students with the highest grades | TU Delft, Delft |
| 2013 | Topper , Medal of Honor from the Dept. of Mechatronics 2009-2013 | MIT, India |
| 2009 | Scholarship , MHRD Karnataka State Scholarship for Excellence in 12th | Bangalore, India |

Extra Activity

BEST (Board of European Students of Technology)

Delft, Netherlands

MEMBER

Feb. 2016 - PRESENT

- Organizational skills for hosting international events like exchange courses
- Work in a multi-national environment

Bangalore Institute of Movement and Research Analysis

Bangalore, India

ATTENDEE

Jan. 2014

- Introduction to 2D & 3D gait analysis from a medical context
- Interaction with leading doctors involved in Movement research

Indian Institute of Technology

Bombay, India

WORKSHOP

Jul. 2012

- Design and Development of a 4-Degree of freedom Haptic controlled robotic arm