Shravan **Tata Ramalingasetty**

Postdoctoral fellow, Computational Neuroscience

Philadelphia, PA, USA

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Education

EPFL (École Polytechnique Fédérale de Lausanne) — *Luasanne, Switzerland*

PhD, BioRob — *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) — *Delft, Netherlands*

M.Sc in Mechanical Engineering, Bio Robotics — *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) — *Manipal, India*

B.E in Mechatronics Engineering — *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

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

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

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***, Özdil 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 Biomechatronics 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*

Experience

Danner Lab — *Drexel University, USA*

Post-doctoral fellow — *2022-Current*

- 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 — *Open-source*

Co-Developer — *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 — *Delft, Netherlands*

Teaching Assistant <Control Methods for Robotics> — *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

Delft, Netherlands

Software & Electronics <Zebro-Art : When robots meet art > *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.

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