

Pulkit Goyal

✉ pulkitgoyal.work@gmail.com | ☎ +49 174 650 4022

INTERESTS

- AI • ML/DL/RL • Robotics/Control
- Dynamical Systems • Mathematics
- Cognitive Disorders • Theoretical/
- Computational Neuroscience • BCI

EDUCATION

University of Tübingen | M.Sc.

NEURAL INFORMATION PROCESSING

Grad. May 2024 | Tübingen, Germany
GPA: 1.30 (~90% / "very good")

IIT Roorkee | B.Tech.

MAJOR: MECHANICAL ENGINEERING

MINOR: COMPUTER SCIENCE

Grad. Oct 2018 | Roorkee, India
GPA: 85.68%

Delhi Public School Indore

SCIENCE AND MATHEMATICS

Grad. Apr 2014 | Indore, India
GPA: 89.4%

SKILLS

Programming

- Python (9Y) • C/C++ (4Y) • Go • C#
- JavaScript/TypeScript (3Y) • MATLAB
- Linux/Shell Script • $\LaTeX$ • Git • Docker
- ROS • NumPy • PyTorch • scikit-learn
- openCV • Pandas • ...

Other Proficiencies

- Cloud Development (AWS/GCP)
- Web Development • Network Security
- CI/CD • Instrumentation • Automation
- Hardware Communication Protocols
- Microcontrollers • Electronic Design
- Sensors • CAD/CAM

Languages

- English (Native) • Hindi (Native)
- Japanese (Elementary ~JLPT-N5)
- German (Elementary ~A1)

MISCELLANEOUS

JEE Advanced, 2014

National Rank: 1331 in 150,000 selected candidates from 1.5 million students

Teaching Assistant | IIT-R

- Programming and Data Structures
- Engineering Drawing

Hobbies

AI, Astronomy, Astrophotography, Automation, Cycling, Football, Guitar, History, Philosophy, Photography, Physics, Puzzles, Table Tennis, Trekking, Writing



WORK EXPERIENCE

JIG-SAW INC. | SOFTWARE AND EMBEDDED SYSTEMS ENGINEER

3.00 Y | Oct 2018 – Sep 2021 | Full-Time | Tokyo, Japan

[[recommendation_letter](#)]

Resonest Corporation | MACHINE LEARNING ENGINEER

0.42 Y | Nov 2020 – Mar 2021 | Part-Time | Tokyo, Japan

ITC Ltd. | INDUSTRIAL AUTOMATION ENGINEER

0.25 Y | May 2017 – July 2017 | Intern | Guntur, India

[[recommendation_letter](#)]

Team Robocon IIT Roorkee | ROBOTICS AND CONTROLS ENGINEER

3.25 Y | Jan 2015 – Apr 2018 | Volunteer | IIT Roorkee

RESEARCH EXPERIENCE

Cognitive Neurorobotics Research Unit, OIST | RESEARCH INTERN

0.5 Y | May 2024 – Dec 2024 | Intern | Okinawa, Japan

[[report](#)]

Can Self-Exploration Methods in Reinforcement Learning Model OCD? [[presentation](#)]

cereneo Foundation (cefir) | RESEARCH INTERN

[[recommendation_letter](#)]

0.25 Y | Dec 2022 – Mar 2023 | Intern | Vitznau, Switzerland

[[code](#)] [[poster](#)] [[report](#)]

fnirsPy: A Sufficient, Easy, and Flexible fNIRS Preprocessing Library [[presentation](#)]

Natural Intelligence Lab, MPI BC | STUDENT ASSISTANT

0.25 Y | Sep 2022 – Nov 2022 | Full-Time (HiWi) | Tübingen, Germany

Dynamical recurrent network models of the primary visual cortex (V1)

[[presentation](#)]

Analysis of fMRI (retinotopy) data from the Human Connectome Project

[[code](#)]

Burgalossi Lab, CIN | COMPUTATIONAL RESEARCH ASSISTANT

0.83 Y | Nov 2021 – Aug 2022 | Part-Time (HiWi) | Tübingen, Germany

spike-video: Python library to generate and synchronize animated spike plots [[code](#)]

ACADEMIC PROJECTS

Building Visual Semantic Bias in Curious Exploration during Free Play

Sep 2023 – Apr 2024 | Master's Thesis | Autonomous Learning Group, MPI IS

Humanoid Gait Modelling on Vibrating Beam

Aug 2017 – May 2018 | B.Tech Project | IIT Roorkee

[[recommendation_letter](#)]

+ Older Projects (in Robotics & Machine Learning) | IIT Roorkee

- Design of 8-DOF manipulator on a holonomic platform [[recommendation_letter](#)]
- Metaphor-based metaheuristics for multi-objective job-shop problem, in MATLAB
- Comparative study on LSTM, SVR and ARIMA for short-term time-series prediction
- A method for digital circlism art using mean-shift segmentation and EDT algorithm
- SVM classifier for satellite images in C++ using LIBSVM library
- Stereo Imaging using hierarchical segmentation and iterative cluster comparison
- Servo controlled, 3D-line following robot using computer vision (on-board camera)
- Coordinate (point-to-point) based navigation for four (Mecanum-)wheeled robot
- (Omni-) Wheeled robot to trace any mathematical curve in explicit notation
- Fuzzy Logic library in C++ with generalised rule-set for wheeled-robot navigation

ACADEMIC ACHIEVEMENTS

2019 Trust Scholarship | Dean of Resources and Alumni Affairs, IIT Roorkee

2018 Annual Excellence Award | IIT Roorkee Heritage Foundation

2016 Summer Undergraduate Research Award | SRIC, IIT Roorkee

2014 Merit Certificate in Mathematics, Top 0.1% (100% Marks) | AISSCE-CBSE

POSITIONS OF RESPONSIBILITY

Jan'18 – Mar'18

Convener

Srishti (Techno-Hobby Exhibition), IIT-R

Aug'17 – Apr'18

Secretary

Tinkering Lab (Rapid Prototyping Lab), IIT-R

Jan'17 – Apr'18

Executive Member

Students' Technical Council, IIT-R

Sep'16 – Apr'18

Senior Mentor

Student Mentorship Program, IIT-R

Apr'16 – Apr'17

Joint Secretary

Models and Robotics Section, IIT-R