Shaurya Goyal

Phone: +33 7 63 57 62 88 | **Email:** shaurya.goyal@ens.psl.eu

Education

École Normale Supérieure (ENS–PSL), Paris — **2024 - Ongoing**
MS in Cognitive Science, Diploma ENS — - / 20
Specialization: Cognitive Modelling, Theoretical Neuroscience and AI

Indian Institute of Technology (IIT), Kharagpur — **2020 - 2023**
BS-MS in Economics   Minors : Mathematics, Computer Science — CGPA: 8.9 / 10
Transferred to ENS-PSL after completing 3 years

Publication and Conference Posters

Cumpelik A., **Goyal S.**, Barayeu U., Csicsvari J. L. ; The role of prefrontal spatial coding in supporting a contextual association task.
Co-Author: FENS Forum, 2024; Society for Neuroscience (SfN), 2023, 2024
Presenter: Junior Scientists Workshop on Recent Advances in Theoretical Neuroscience, 2024

Subbalakshmi, A.R., Sahoo, S., Manjunatha, P., **Goyal, S.**, et al. The ELF3 transcription factor is associated with an epithelial phenotype and represses epithelial-mesenchymal transition. J Biol Eng 17, 17 (2023). https://doi.org/10.1186/s13036-023-00333-z

Research Experience

Role of mPFC and CA1 in Context Association — **May 2023 – August 2024**
IST Austria — Prof Jozsef Csicsvari — In-Person
- Developed behavioral classification and investigated context and spatial representations over learning
- Analyzed the role of replay in guiding context dependent and independent decision making

Hippocampal Cell Dynamics During Replay — **October 2022 – July 2023**
University College London (UCL) — Prof Dan Bendor — In-Person/Remote
- Developed a novel bayesian decoding method to track spatial representations in sharp-wave ripples
- Analyzed CA1 neural activity to investigate memory stabilization and consolidation in novel environments

Neuro Inspired Reinforcement Learning — **February – September 2022**
Brown University — Prof Michael J Frank — Remote
- Developed an actor-critic deep reinforcement learning model motivated by dopamine circuits in the striatum
- Implemented and compared the performance against A2C on Atari games with sparse rewards

Epithelial - Mesenchymal Plasticity in Cancer — **November 2021 – June 2022**
Indian Institute of Science (IISc), Bangalore — Prof Mohit Kumar Jolly — Remote
- Examined the effect of ELF3 gene on transcriptional regulation and immune evasion in breast cancer
- Used mechanistic modelling, simulations and machine learning to analyze phenotype switching dynamics

Awards and Scholarships

Selected and funded for ICTP Junior Scientists Workshop on Theoretical Neuroscience	2024
Charpak BCS Scholarship	2024
ENS International Selection Scholarship	2024
Erasmus+ Training Mobility Grant	2024
COSYNE Undergraduate Travel Award	2024
ISTern, IST Austria Summer Program and Oead Scholarship	2023
MITACS Globalink Summer Internship [Declined]	2023
Summer Research Award, Next Gen Scientists Foundation	2022
International Research Fellowship, IIT Kharagpur Foundation	2022

Selected for PhD-level inStem workshop on Stem Cells and funded by Govt. of India	2022
Selected for PhD-level ICTP-ICTS Winter School in Sensorimotor Control	2021
Merit-Cum-Means (MCM) Scholarship, IIT Kharagpur [full tuition + stipend]	2020-2023
Top 1% in JEE Advanced from 150,000 selected students across India	2020
Top 0.3% in JEE Mains from over 1 million students across India	2020

Programming Skills

Python, MATLAB, Linux (Bash), HPC (SLURM), PyTorch, C/C++

Relevant Coursework

Brain: Computational Neuroscience, Learning and Decision Making, Neuroscience[1], Cognitive Modelling
CS: Machine Learning[1], Deep Learning[2], Math Methods for Data Science, Algorithms 1[2]
Math: Non-Linear Dynamics[2], Probability, Statistics, Linear Algebra, Numerical Analysis
Other: Statistical Physics of Machine Learning, Econometrics 1 & 2, Linear Programming

Workshops / Conferences Attended   1 *PhD level course*, 2 *Online from Stanford, MITOCW etc*

FENS Forum	2024
ICTP Junior Scientists Workshop on Theoretical Neuroscience	2024
COSYNE Main Meeting and Workshops	2024
Young Scientist's Symposium - IST Austria	2023
Computational Neuroscience - Neuromatch Academy	2022
Essential Stem Cell Lab Techniques - inStem and NCBS, Bangalore, India	2022
Sensorimotor Control - ICTP & ICTS	2021

Mentoring

Academic Mentor, IIT Kharagpur   **2022 − 2023**

- Mentored 6 students (2022) and 3 students (2023) in their 1st year to ensure they have a smooth integration to university life and assisting with academic and non-academic matters

English Mentor, IIT Kharagpur   **2022**

- Guided 4 students who struggled with English by providing feedback and solving doubts based on weekly exercises for 1 semester

Leadership / Extracurricular

- Co-Founder of Biotechnology Reading Group and iGEM Team, IIT Kharagpur
- National level debate tournaments as a member of the Debating Society, IIT Kharagpur
- Represented institute in the Inter-IIT Scrabble Tournament
- Selected as Times Scholar (2019) from 300,000+ students and felicitated by Vice-President of India
- Silver Medal in National Taekwondo Championship (2017) and 1st Dan Black Belt

Other Interests: Hiking, Cooking, Running, Frisbee, Volleyball, Board Games, Bouldering, Reading