

# Diptyajit Das

🌐 [www.dasdiptyajit.de](http://www.dasdiptyajit.de)

## Personal Information

---

☎ (+49) 015904869299      📍 Heidelberg, Germany  
✉ [diptyajit.das@ae.mpg.de](mailto:diptyajit.das@ae.mpg.de)      🎓 Google Scholar  
in [/dasdiptyajit](https://www.linkedin.com/in/dasdiptyajit)      🌐 [/dasdiptyajit](https://www.github.com/dasdiptyajit)



## Technical Skills

---

- Scientific Computing
- Signal and Image processing
- Brain Functional Imaging (MEG, EEG, fMRI)
- Software Development
- Software Quality Control
- Experimental Design (Embedded Systems: Microcontroller)
- Statistical Analysis
- Simulation Modeling
- Data Analysis

## Computational Skills

---

- **Languages:** C, Python, Bash, MATLAB, HTML, CSS
- **Operating Systems:** Linux, macOS
- **Computer Vision:** OpenCV, Scikit-Image
- **Machine Learning:** Scikit-learn
- **Relevant Libraries:** Matplotlib, Seaborn, Pandas, Numpy, Scipy
- **Neuroimaging Tools:** FreeSurfer, FsFast, MNE-Python, MNE-C, fMRIPrep, Nilearn, Nipype, NiBabel, pydicom, dcm2niix, pydeface, BIDScoin, MNE-BIDS, XNAT
- **Development Tools:** VS Code, PyCharm, Jupyter Notebook, Git, GitHub
- **Simulation Tools:** LabVIEW, Simulink, NI Multisim, ExpressPCB, Microcontroller, Psychtoolbox
- **Miscellaneous:** HPC (High Performance Computing), REST APIs, MkDocs, Joplin, Mermaid, LaTeX, Inkscape, Adobe Lightroom

## Experiences

---

**Max Planck Institute for Empirical Aesthetics**  
*Scientific Software Engineer - Cogitate consortium*

March 2024 – Present  
Frankfurt, Germany

- Responsible for data curation, data anonymization, and metadata organization of neuroimaging datasets: iEEG, MEG, fMRI, MR and CT (DICOMS images), behavioral and eye tracking data.
- Deployed fair-code practices (software development/maintenance) for reproducibility of data analysis processes according to BIDS standard.
- Provided user support, troubleshooting, and managed data uploads, sharing, and quality control on XNAT, leveraging HPC for large-scale datasets.

**Universitätsklinikum Heidelberg (UKHD)**  
*Research Engineer - Brain functional imaging, Department of Neurology*

July 2018 – December 2023  
Heidelberg, Germany

- Led research coordination, investigation, experimental design (hardware design), large-scale brain data acquisition, and technical documentation.
- Modeled and visualized multi-modal brain imaging data: EEG, MEG, and fMRI(MR).
- Implemented various computational methods (artifact corrections, dimension reduction, head modelling (BEM), signal/image co-registration, surface and volumetric source localization, functional connectivity analysis)

- Demonstrated extensive proficiency in statistical (covering t-tests, F-tests, ANOVA, permutation tests, FDR and bootstrap) analysis to analyze and interpret neural data.
- Designed cortical dipole simulations, classification and regression models to predict dynamic neuromagnetic brain signals (M/EEG).
- Successfully collaborated on two scientific projects alongside researchers from the USA, Australia, Finland, and Germany.

**Forschungszentrum Jülich GmbH**

November 2016 – November 2017

*Graduate Research Assistant - Medical Imaging Physics (INM-4)*

Jülich, Germany

- Developed and designed an open-source microcontroller-based embedded system for real-time head motion detection during MEG recordings.
- Implemented Inverse (source) modelling, and statistical analysis of MEG data.
- *Master thesis:* Multivariate statistical analysis of MEG data.

**FH Aachen University of Applied Sciences**

April 2016 – July 2016

*Scientific Assistant - Department of Medical Engineering and Technomathematics*

Aachen, Germany

- Designed and instructed fluid dynamics experiments for master's students.

**Fortis Hospital and Kidney Institutes**

February 2014 – June 2014

*Biomedical Engineer - Internship*

Kolkata, India

- Responsible for installation, calibration, troubleshooting, and maintenance of medical healthcare devices.

**Education**

---

**Universität Heidelberg**

July 2020 – Present

*Doctor of human sciences (Dr. sc. hum.)*

Heidelberg, Germany

- *PhD thesis:* Human brain mapping of P300 neuronal generators with EEG, MEG and fMRI.
- *Specialization:* Computational Neuroscience (major), Medical Physics (minor)

**FH Aachen – University of Applied Sciences**

March 2015 – February 2018

*Master of Science (MSc.) - Biomedical Engineering*

Aachen, Germany

Grade: 1,3

**West Bengal University of Technology**

August 2009 – July 2013

*Bachelor of Technology (B.Tech) - Biomedical Engineering*

Kolkata, India

Grade: 1,7

**Languages**

---

**Bengali:** Mother tongue

**English:** Fluent

**Hindi:** Fluent

**German:** Basic (A2)

**Interests**

---

**Favourite writers:** Simon Sinek, Jorge Luis Borges

**Hobbies:** Open-science, Photography, Chess