

Anuja Negi

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Education

Bernstein Center for Computational Neuroscience

MASTERS IN COMPUTATIONAL NEUROSCIENCE

Berlin, Germany

Oct. 2020 - exp. Fall 2023

- Joint degree by **Technische Universität** Berlin and **Humboldt-Universität** zu Berlin
- Awardee of the prestigious Deutschlandstipendium 2021/2022.

<https://chennai.vit.ac.in/Vellore> Institute of Technology, Chennai Campus

BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING

Chennai, India

Jul. 2016 - Jun. 2020

- **CGPA:** 9.34/10.00 | **Rank:** 9/344 (Top 3%)

Publications

JOURNAL PAPERS

- | | | |
|------|--|---------------------|
| 2022 | A benchmark for prediction of psychiatric multimorbidity from resting EEG data in a large pediatric sample , Langer, N., Plomecka, M.B., Tröndle, M., Negi, A. , Popov, T., Milham, M. and Haufe, S., NeuroImage. | DOI |
| 2020 | RDA-UNET-WGAN: an accurate breast ultrasound lesion segmentation using wasserstein generative adversarial networks. , Negi, A. , Raj, A.N.J., Nersisson, R., Zhuang, Z. and Murugappan, M., Arabian Journal for Science and Engineering. | DOI |

CONFERENCE PAPERS

- | | | |
|------|---|---------------------|
| 2018 | Eye state detection for use in advanced driver assistance systems. , Sharma, S., Negi, A. , Singh, S., Raj, D.S.S., Graceline, J.S., Vaidehi, V. and Ganesan, S., Advance Computing (ICRTAC). IEEE. | DOI |
| 2018 | Gini Index and Entropy-Based Evaluation: A Retrospective Study and Proposal of Evaluation Method for Image Segmentation. , Negi, A. , Sharma, S. and Priyadarshini, J., International Conference on Nanoelectronics, Circuits and Communication Systems. Springer | DOI |

Experience

RESEARCH

Charité - Brain and Data Science Group

STUDENT RESEARCH ASSISTANT

Berlin, Germany

Apr 2021 - present

- Working on Benchmarking of M/EEG source reconstructions under Dr. Stefan Haufe and Alexandre Gramfort
- Working on the neuroimaging evaluation platform, as part of the ITU-WHO Focus Group on Artificial Intelligence for Health

Brain Simulation Section

LAB ROTATION STUDENT

Berlin, Germany

Apr 2022 - June 2022

- Worked on virtual transcranial magnetic stimulation(TMS) with whole brain modelling using The Virtual Brain supervised by Dr. Petra Ritter
- Recreated TMS evoked potentials in EEG recordings by stimulating the dorsolateral prefrontal cortex with a figure-8 coil on the brain model

Haynes Neuroimaging Lab

LAB ROTATION STUDENT

Berlin, Germany

Nov 2021 - Feb 2022

- Worked on methods for analysis of functional task-related connectivity with fMRI data under Dr. John Dylan Haynes and Dr. Doris Pischke
- Used fMRI experiments to investigate partner-specific neural preparation in human-human and human-robot interactions

Siemens Technology and Services Pvt. Ltd.

RESEARCH INTERN

Bengaluru, India

Jan 2020 - Jun 2020

- Built an XAI(explainable artificial intelligence) engine to monitor and understand AI decisions taken by cyber physical systems in smart industries
- The system backed explainability using visualization and textual explanations on a dashboard for real-time diagnosis of the plant processes

Shantou University

RESEARCH INTERN

Shantou, China

May 2019 - Jul 2019

- Designed a novel architecture for identification and segmentation of tumor/lesion in breast ultrasound images using Wasserstein GANs
- A Residual-Dilated-Attention-Gate-UNet (RDAU-NET) acts as the generator (segmentation module) and a CNN classifier as the discriminator
- Results better than most conventional deep net architectures were achieved- ACC:0.98, DSC:0.88, AUC:0.95

INDUSTRY

Google Summer of Code

Remote

CONTRIBUTOR @ INTERNATIONAL NEUROINFORMATICS COORDINATING FACILITY (INCF)

June 2022 - present

- Working on creating neuronal models in NeuroML on OSB by tuning them to the biophysical data from the mouse V1 released by Allen institute.
- Supervised by Dr. Pdraig Gleeson and Ankur Sinha. See contributions here.

Helix Tech Pvt. Ltd.

Porvorim, India

SOFTWARE DEVELOPMENT INTERN

May 2018 - Jul. 2018

- Built and deployed an angularJS application - a retailer ordering portal for GKB Opticals; implementing all business logic as an angular service
- Wrote API endpoints with corresponding error handlers served on a Node.js server for mySQL operations, with each cross-tested on Postman
- Learned to optimize analytic queries, for MySQL and MongoDB production databases, to improve query performance and reduce server load

Hasura

Bengaluru, India

PRODUCT DEVELOPMENT INTERN

Dec. 2017 - Feb. 2018

- Worked as a Flask developer and implemented backend for a react-native mobile application that integrated the Hasura and Intercom platform
- Wrote custom services that integrated Intercom APIs to send out daily emails with open conversations for X days/hours at custom time specified

VOLUNTEERING AND TEACHING

1 Million Women to Tech

MENTOR

Dec. 2018 - Mar. 2019

- Planned the eight weeks JavaScript oriented Winter of Data programme, that involves key areas of statistics, data science, and data analytics
- Helped with setting up repositories for course-related Jupyter notebooks, and assignments for lessons with descriptive steps and starter code
- Regulated weekly mentoring and doubt clearing sessions for taught lessons, and helped to build the course environment on LearnDash

School of Computing Science and Engineering, VIT University

TEACHING ASSISTANT

Jul. 2018 - Dec. 2018

- Assisted students for a semester, in developing Object Oriented Programming concepts and programming fundamentals in Python and C
- Successfully taught and organized concept building and practice programming sessions 4 hours/week for students with varied backgrounds
- Instructed these topics - objects, operator overloading, function and object polymorphism, file I/O, stacks, queues, searching and sorting

Projects

Ongoing	BSI Zoo , Benchmarking performance M/EEG inverse source reconstruction methods	Code
Ongoing	AllenInstituteNeuroML , Simulating mouse V1 cell models in NeuroML	Code
2021-22	Print your Brain , Automated processing of MRI brain scans to 3D print them!	Code
2021	Causal Inference , Recreated simulation for Causal Inference in Multisensory Perception	Code
2021	Clustered Connections , Recreated simulation for Slow Dynamics and High Variability in Networks with Clustered Connections	Code Blog
2019	VQA , A simple visual question answering agent	Code
2019	AMBER , an uBER for AMbulance mobile app built in a 24hr hackthon	Code URL

Certifications

Mar. 2019	Neural Networks and Deep Learning , deeplearning.ai	Certificate URL
Jul. 2018	Divide and Conquer, Sorting and Searching, and Randomized Algorithms , Stanford University	Certificate URL
Dec. 2017	Machine Learning , Stanford University	Certificate URL
Oct. 2017	Introduction to Operating Systems , IIT Madras, Elite certification	Certificate URL
Oct. 2017	Introduction to Modern Application Development , IIT Madras, Elite certification	Certificate URL

Skills

Programming	Python, C/C++, Javascript
Web	Flask, Node.js, Angular
Other	Neuroimaging, Communication, Time Management, Analysis, Research
Languages	English C1, Hindi C1, German A1