

# Dheeraj Varghese

Msc student focusing on multi-modal learning and generative pre-training with experience in large scale training

Nationality Indian

Languages English (C1), Tamil

Amsterdam, The Netherlands

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## EXPERIENCE

### Teaching Assistant

#### Vrije Universiteit

📅 Apr 2024 – May 2024 📍 Amsterdam, Netherlands

Teaching

Grading

- Tutoring students on different topics in Natural Language Processing, under [dr. Lucia Donatelli](#).
- Previously, as a TA for Learning Machines, guided students in designing DQN networks for diverse robot tasks

### Research Intern

#### Pennsylvania State University

📅 Jan 2022 – July 2022 📍 State College, PA

Vision

Neuroscience

Web development

- Built an intuitive [web interface](#) and visualization of [RAGNAROC](#), a computational model of human visual attention; hosted by [dr. Brad Wyble](#).
- Optimized internal model to reduce execution time by over 50% and handle multiple stimuli in a trial.

### Software Developer Intern

#### Humboldt-Universität zu Berlin, IP

📅 Jun 2021 – Aug 2021 📍 Berlin, Germany

Hybrid Development

Scrum

- Collaborated with the founders of a start-up ([Eventasy](#)) to turn an idea into a marketable company.
- Optimized routing and load times up to 10%, reducing performance bottlenecks during peak traffic.

## PROJECTS

### ClipCap Evolved

- Extended the ClipCap approach by integrating the FLAN-T5 (Full & Decoder only) models into the approach.
- Conducted multiple experiments to analyze the effects of language models and visual representations from CLIP.
- Achieved improved CIDEr and SPICE scores over the baseline on the Image Captioning task, with only 7 million trainable parameters ([Blogpost](#), [Code](#)).

### Amrita Repository

- Fixed issues and added features on the Android application engineered for my peers to avail old question papers, timetables, etc. which has received 10K+ downloads in [Play Store](#), with an average of 5K monthly active users. ([Code](#))

## EDUCATION

### Master of Science, Artificial Intelligence

#### Vrije Universiteit

📅 Sep 2022 – Aug 2024 📍 Amsterdam, Netherlands

- Supervisors: [dr. Yuki Asano](#) and [Mohammad Derakhshani](#)
- My research focuses on curriculum learning in Visual Language Models.
- In the Health track; granted VUFP, 100% scholarship
- Courses on AI, including DL, NLP, Multi-Agent Systems, Medical AI and Interpretability.

### B. Tech, Computer Science and Engineering

#### Amrita Vishwa Vidyapeetham

📅 Jul 2018 – Jun 2022 📍 Coimbatore, India

- Worked with [dr. Vidhya Balasubramanian](#) on Distributed Disaster Response Systems.
- Conducted workshops as DL Lead, in the Google Developer Student Club.
- Courses on CS, including Data Structures, Analysis of Algorithms, Theory of Computation
- Final GPA: 9.13/10 (Indian grading system).

## SKILLS

**DL Frameworks:** PyTorch (2021-present, R&T), Tensorflow (2021-2023), HuggingFace (2022-Present, R) (R - Research, T - Teaching)

**Programming languages:** Python (2019-present), HTML (2016-present), Java (2014-2022), C (2018-2022)

**Additional skills:** SLURM cluster computing (2023-present), git (2020-present), Docker (2020-present)