Chinmay Surendra **Rao**

Artificial Intelligence Postgraduate

Melissabeembd 18-B, 6229WG Maastricht, The Netherlands

+31 (0) 626430311 | chinmay.srao97@gmail.com | cnmy-ro | chinmay-rao | **DoB:** 09 Dec, 1997

Education

Maastricht University
Maastricht, The Netherlands

M.Sc. in Artificial Intelligence (Cum Laude) — *Sep. 2019 - Jul. 2021*

- GPA (0-10 scale): 8.36

Karunya Institute of Technology and Sciences (KITS)
Coimbatore, India

B.Tech. in Electronics and Communications Engineering (First Class with Distinction) — *Jul. 2015 - Apr. 2019*

- CGPA (0-10 scale): 9.19

Lions English School
Silvassa, India

Higher Secondary School (Computer Science, Mathematics, Physics, Chemistry) — *Apr. 2013 - Mar. 2015*

- Percentage score (final year): 94%

Lions English School
Silvassa, India

Senior Secondary School — *Apr. 2011 - Mar. 2013*

- CGPA (0-10 scale, final year): 10.0

Experience

Maastro
Maastricht, The Netherlands

Research Intern — *Aug. 2020 - Jul. 2021*

- Worked on my research internship project titled "*Head-and-Neck Tumor Segmentation in Multi-Modality PET-CT Images*".
- Participated in the MICCAI 2020 HECKTOR segmentation challenge. Alongside a colleague, I submitted a conference paper describing our methods, titled "*Oropharyngeal Tumour Segmentation Using Ensemble 3D PET-CT Fusion Networks for the HECKTOR Challenge*".
- Worked on my Master thesis project titled "*Predicting Tumor Hypoxia Maps from FDG-PET/CT Images using GANs*".

São Paulo State University (UNESP)
Ilha Solteira, Brazil

Research Intern — *Oct. 2018 - Nov. 2018*

- Worked on my Bachelor project titled "*ART Neural Computational Models for Image Clustering and Classification*".

Prescience Automation
Silvassa, India

Engineering Intern — *Apr. 2017 - Jun. 2017*

- Developed a prototype embedded system for detecting product faults in a copper wire manufacturing process. The system interfaces with industrial proximity sensors that detect breaks in the processed wire and transmits the fault event data to a remote dashboard.

Academic Projects

Predicting Tumor Hypoxia Maps from FDG-PET/CT Images using GANs
Maastricht, The Netherlands

Maastro — *Feb. 2021 - Jul. 2021*

- Investigated paired and unpaired image translation GANs for synthesizing full 3D HX4-PET images from FDG-PET and planning CT.
- Developed an improved CycleGAN training methodology to optimize the system for this multimodal use case.

Head-and-Neck Tumor Segmentation in Multi-Modality PET-CT Images
Maastricht, The Netherlands

Maastro — *Sep. 2020 - Jan. 2021*

- Investigated multimodal deep learning-based FDG-PET/CT fusion models for segmenting oropharyngeal gross tumor volume.

Tovertafel 2.0 (Group Project)
Maastricht, The Netherlands

Maastricht University — *Feb. 2020 - Jun. 2020*

- Tovertafel (product of Active Cues) is a game console for activity stimulation in elderly people with dementia. As a group of six members, we implemented a similar system and extended it to be adaptive to the person's observed mental state by incorporating computer vision-based body pose estimation and facial emotion recognition.

Improving Algorithm Selection in the Hyper-Agent approach to General Video Game Playing (Group Project)

Maastricht, The Netherlands

Maastricht University — *Sep. 2019 - Jan. 2020*

- As a group of six members, we explored ways to improve a general video-game playing A.I. hyper agent – a higher-level agent that can play multiple games moderately well (even the games previously unknown to it) instead of being highly specialized in just one game.

ART Neural Computational Models for Image Clustering and Classification

Ilha Solteira, Brazil

São Paulo State University (UNESP) — *Oct. 2018 - Nov. 2018*

- Investigated neural network architectures based on Adaptive Resonance Theory (ART) and fuzzy logic for both supervised and unsupervised image recognition using the MNIST dataset of handwritten digits.
- Extended the recognition pipeline by introducing an autoencoder-based preprocessing stage to reduce the data dimensionality and improve the robustness of the Fuzzy ART models.

Publications

Oropharyngeal Tumour Segmentation Using Ensemble 3D PET-CT Fusion Networks for the HECKTOR Challenge

Maastricht, The Netherlands

Book series: Springer Lecture Notes in Computer Science · **DOI:** 10.1007/978-3-030-67194-5_8 — *Jan. 2021*

- Written jointly with a colleague as first authors. Describes our method for segmentation of oropharyngeal (head-and-neck site) gross tumor volume on FDG-PET/CT images. Work conducted as part of the HECKTOR challenge at MICCAI 2020.

Skills

Areas of Interest	Deep learning · Signal and image processing · Computer vision
Programming Languages	Python · C/C++ · Bash · MATLAB
Deep Learning Engines	PyTorch · TensorFlow · Keras
Software Tools	Git · Docker
Systems	Linux machines · SLURM clusters · Red Hat OpenShift clusters
Languages	English · Konkani · Hindi · Marathi

Certifications

IELTS Academic English Language Certification (CEFR Level C1)

Issued by British Council — *Issued Feb. 2019 - Expired Jan. 2021*

- Overall band score (0-10 scale): 8.0

Extracurricular Work

ganslate (Open-source software project)

Maastricht, The Netherlands

Contributor — *Feb. 2021 - PRESENT*

- *ganslate* is an extensible GAN framework for image-to-image translation that provides support for both natural and medical images.
- Github link: `https://github.com/ganslate-team/ganslate`

Impressions (Student magazine of KITS)

Coimbatore, India

Core Member & Sketch Artist — *Nov. 2016 - Apr. 2018*

- Contributed to the magazine content with hand-drawn comics and other artwork.
- Participated in miscellaneous activities related to magazine sales and member recruitment.

Science and Religion Dialogue Club (KITS)

Coimbatore, India

Member — *Nov. 2016 - Apr. 2017*

- Participated in regular discussions and debates.

Leisure Interests

Art	Sketching · Water color painting
Reading	Philosophy · Physics · Computing Technology · Science fiction
DIY Projects	Involving electronic circuits, sensors, and programmable boards
Sports	Running · Hiking · Football · Badminton · Squash
Others	Photography