ALBERT NEGURA

Machine Learning Software Engineer & MSc. Artificial Intelligence Student

Analytical and detail-oriented Machine Learning Software Engineer, with experience in high-pressure, research-focused environments. I have a passion for learning, automation and robotics. I am currently working as a medior Software Engineer for a big data analysis platform for software lifecycle management platform.

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EXPERIENCE

Medior Software Engineer
Fulltime - SoftwareONE Netherlands

📅 Oct 2022 – Present   ⚲ Utrecht, Netherlands

- Participated in Scrum sprints towards the development of a big data analytics tool for production use.
- Led development for large-scale data anonymization and regression testing.
- Worked on software licensing criteria for SAP, Oracle and IBM tooling.
- Managed GitHub workflow of project with 50 regular contributors on a large codebase.
- Managed Azure infrastructure and provided production support to technical analysts and consultants.

Machine Learning Software Engineer
Fulltime - NavInfo Europe

📅 Jan 2022 – Sep 2022   ⚲ Eindhoven, Netherlands

- Led the development of cybersecurity web MLOps platform, including visualization, algorithmic, machine learning, XAI and data science solutions.
- Implemented framework/format-agnostic adversarial computer vision solutions for real-time computer vision tasks.
- Designed, developed, and benchmarked the natural and adversarial robustness of different model architectures.
- Prepared draft standards proposals and conference submissions in collaboration with different departments.
- Interviewed and supervised interns on various projects related to machine learning and cybersecurity solutions.

AI and Cybersecurity Research Intern
Internship - NavInfo Europe

📅 Jul 2021 – Dec 2021   ⚲ Eindhoven, Netherlands

- Implemented advanced hyperparameter optimization techniques (CMA-ES, SMBO, DMFBS) for adversarial computer vision systems. Implemented corresponding machine learning pipelines. Presented findings to key stakeholders.
- Implemented various computer vision augmentation techniques and wrote corresponding unit tests for web platform.

Teaching Assistant
Part-time - Maastricht University

📅 Feb 2021 – Jul 2021   ⚲ Maastricht, Netherlands

- Organized practical sessions for Bachelor students. Ensured equal participation and provided feedback and assistance to approximately 200 students overall. Graded assignments according to pre-established criteria and strict deadlines.

EDUCATION

Maastricht University
MSc. Artificial Intelligence

📅 Sep 2020-Present   ⚲ Maastricht, Netherlands

- Courses consisted of Search AI, Multi-Agent Systems, Advanced Robotic Systems, Advanced Computer Vision and Advanced Deep Learning.
- Various small-scale group projects including (abstractive and extractive) text summarization, visualization software, board game AI, image processing techniques from scratch, deep learning models on real datasets, voting simulation software, etc.
- Main graded group projects: Comparison of game search AI in a GGP context - Python, Java, Ludii, Machine Learning
- Robotic Arm Manipulation with RL - Python, C++, ROS, Computer Vision, Deep Learning

Maastricht University
BSc. Data Science and Knowledge Engineering

📅 Sep 2016-Aug 2020   ⚲ Maastricht, Netherlands

- Covered courses related to all aspects of AI and Data Science, with a personal focus on robotics and computer vision.
- Multidisciplinary 1-year research project organized by EDLAB wherein I was responsible for the data collection, analysis and visualization of perceived happiness among students, and used the suggestions to make high-level proposals to the University board.
- Thesis: Playing-Strength Checkers AI for Assistive Use via player modelling - Python, Deep Learning, Reinforcement Learning

University of Bristol
BSc. Physics with Astrophysics

📅 Oct 2013-Jul 2016   ⚲ Bristol, United Kingdom

- Participated in various extracurricular activities with a focus on robotics and quantum computing
- Various lab projects involving data collection and analysis using digital and analog equipment.
- Thesis: X-Ray Point Sources in the Southern Galactic Plane - C, SQL, Statistics

Student Representative in the Education Programme Committee

Part-time - Maastricht University

📅 Oct 2020 – Jul 2021   📍 Maastricht, Netherlands

- Represented the collective interests of all the AI student to the Education Programme Committee.
- Helped ensure that accreditation criteria of the programme continue to be met and advised on improving quality of degree.

Computer Vision Researcher

Internship - Maastricht University

📅 Sep 2017 – Aug 2019   📍 Maastricht, Netherlands

- As part of MaRBLe 2.0, worked on Computer Vision applications with real time GPU and parallelization constraints for assistive use.
- Primarily researched classification, object detection, pose estimation, human activity recognition and tracking, with some small prototypes in semantic segmentation, content generation and various image-processing techniques.

Treasurer of UBU Gamesoc

Volunteer - University of Bristol Students' Union

📅 Apr 2014-Apr 2015   📍 Bristol, United Kingdom

- Helped increase the membership by 50% compared to previous years.
- Kept and expanded inventory based on feedback.
- Kept up to date with common trends and advised committee in regards to common market / industry trends.
- Solicited and acted upon member feedback to increase the overall quality of the services provided by the society.

PERSONAL PROJECTS

Robotic Simulation Software - Python

- 2D Cleaning-robot simulation software (open source) with customizable environments using evolutionary neural network controllers for cleaning and self-localization and navigation using a Kalman Filter and DQN.

Visualization of Optimization Algorithms - Python

- Developed an interface (open source) to showcase various optimization techniques.

Machine Learning Library - Java

- Designed and developed own Machine Learning library and high-efficiency Matrix computation tools for personal use.
- Implemented CNNs, RNNs and Transformers, as well as a few Deep Learning architectures.

Data Annoation Tool - Python

- Designed and developed image data annotation tool for Semantic Segmentation and Object Detection tasks with specified dataset formats.
- Implemented web interface with Django.

Computer Vision Activity Assistant - Python / C++

- Developed a personal home automation solution for personal activity scheduling to maintain a healthier lifestyle using Face and Pose detection, and Face and Activity Recognition.

Several other personal projects in Java, C#, Python, ROS

SKILLS

Technical Skills

Python   Java   C   MATLAB   C++
C#   SQL   ArangoDB   MongoDB
Git   Linux   Tableau   OpenCV
Pandas   Scikit-learn   Tensorflow
Keras   spaCy   NLTK   UiPath
Unity   Pytorch   Jira   CUDA
AWS   Microsoft Azure   Docker
Kubernetes   Django   Jenkins

Soft Skills

Project Management   Collaboration
Agile Development   Public Speaking
Written & Oral Communication

Languages

English - C2   Romanian - C2

AWARDS AND ACHIEVEMENTS

🏆 **9th UCAAT**
Presentation on Automating Adversarial Robustness Testing of DNN Models accepted.

🏆 **Maastricht University Data Analysis Competition**
Won 3rd place in a Maastricht University data analysis competition on Kaggle.

🏆 **Google HashCode 2017**
Scored in top 1000 teams overall during the ranking phase.

🎓 **EDLAB Honours+**
Completed the EDLAB Honours+ Eexcellence programme at Maastricht University.

HOBBIES

- Robotics and Automation - Particular home and gardening automation, but also drones and robot arms
- 3D Printing and Design - Particularly for aiding automation and improving lifestyle
- Cooking - Focusing on cooking using food science
- Reading - Mainly fiction and fantasy, but also tech blogs, standards and reports
- Guitar and Piano - Over 10 years hobby
- Board Games and Tabletop RPGs - Over 10 years hobby
- Video Game Development - Focus on programming custom mods