Quinten Roets

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EDUCATION

Columbia University New York, NY
MS in Computer Science, GPA: 3.8/4.0 May 2023
- Awards: BAEF Fellowship, Columbia SEAS Scholarship
- Activities: Research Assistant at Creative Machines Lab
- Courses: Robot Learning, Computational Aspects of Robotics, Reinforcement Learning, Computer Vision, Representation Learning, Computational Learning Theory

Ghent University Ghent, BE
MS in Computer Science Engineering, GPA: 806/1000; magna cum laude Jul 2022
- Courses: Machine Learning, Artificial Intelligence, Deep Generative Models, Natural Language Processing

Ghent University Ghent, BE
BS in Computer Science Engineering, GPA: 773/1000; magna cum laude Jul 2020

RESEARCH PROJECTS

Graduate research assistant Sept 2022- Jun 2023
- Developed a new approach to recovering the exact parameters of black-box neural networks, surpassing the state of the art in terms of accuracy, sample efficiency, and network size
- Stabilized the reconstruction process for large networks by introducing an advanced iterative sampling technique and recombining inputs with high losses into new queries, enabling exact reconstruction of networks with up to 318, 000 parameters

Thesis research Oct 2021- Jun 2022
- Developed automated labeling system for computer vision models, accelerating initial process by a factor over 200
- Discovered extremely data-efficient unsupervised clustering technique requiring less than 100 samples by leveraging pre-trained multimodal transformer foundation models from Hugging Face
- Tested results on 9 high-dimensional state-of-the-art and production datasets, reaching accuracies over 99%
- Automated labeling and retraining process after data distribution shifts, leading to uninterrupted performance guarantees and minimal production losses at 50+ customers

PROFESSIONAL EXPERIENCE

Robovision Ghent, BE
Deep Learning Research Intern Jul 2021 – Aug 2021
- Investigated 11 different approaches to detect performance issues in neural networks deployed in production
- Delivered novel method detecting inference mistakes and distribution shifts on all production datasets with an overhead of less than 1% by combining 3 different techniques
- Collaborated in Algorithms Team to improve existing algorithms and finish 4 software engineering issues
- Introduced new custom debugging approach, making team members 50% more efficient in solving new issues
- Enhanced optimization scheme of 2 production models, resulting in performance increases at 20+ customers
- Increased stability and performance of core classifier algorithm in company by 10%

ST Engineering iDirect Saint-Nicolas, BE
Software Developer Intern Jul 2020 – Aug 2020
- Developed end-to-end testing framework for satellite traffic in Python and Robot Framework
- Created package to evaluate and summarizing performance of complete Dialog system with one single command
- Presented results and discussed software architecture in daily meetings with international team of 15 people
- Created 3 integration tests for modem configuration user interface, ensuring reliable software at 120+ customers

TECHNICAL SKILLS

Languages: Python, C/C++, Matlab, SQL, HTML5/CSS/Javascript/TypeScript, Java
Frameworks: PyTorch, Pytorch Lightning, Hugging Face, TensorFlow, Pandas, OpenCV, Scikit-learn, PyBullet, Vue, PySpark, Flask, FastAPI, Robot Framework
Tools: Shell scripting, Git/GitLab/Github, Jira, Confluence, Latex

ACTIVITIES

Judoclub Brugge Bruges, BE
Black belt judoka and trainer Oct 2012 - Aug 2022
- Coached and guided groups of 20+ people with mixed levels of experience and ages between 8-50 years, contributing to a 43% membership increase over 4 years