Alexander Nicolas J. Ranschaert

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EDUCATION

MS in Electrical Engineering, Columbia University — New York City, NY
Specialization in Systems Biology and Neuroengineering, 4.26/4.00 GPA — Exp May 2023
- **Honors:** B.A.E.F. Fellowship ($60,000 scholarship), Nikola Tesla Electrical Engineering Scholar ($2,500 award)
- **GPA:** 4.2/4.0

M.Sc. in Electrical Engineering, Ghent University — Ghent, BE
Communication and Information Tech, magna cum laude — Jul 2022
- **Coursework:** Antennas & Propagation, High-speed Electronics, Electromagnetic-aware High Frequency Design, Machine Learning, Deep Learning, Natural Language Processing
- **Thesis:** "Conformal 3D-Printed Highly Efficient Antenna Arrays for Millimeterwave Communication and Radar Systems"

B.Sc. in Electrical Engineering, Ghent University — Ghent, BE
Magna cum laude — Jul 2017

EXPERIENCE

Graduate Research Assistant — New York City, NY
Translational NeuroElectronics Lab, Columbia University — Sep 2022 – Present
- Exploited organic electrochemical transistors for wireless power transfer systems in implantable bioelectronics
- Set up a portable probe station for transistor IV-characteristics and programmed source measure unit with LabView
- Presented findings at the MRS 2023 Spring Conference in San Francisco

Machine Learning Engineering Intern — Ghent, BE
Toqua — Apr 2021 – Aug 2021
- Designed regression models (Scikit-learn & TensorFlow) for ship performance monitoring from sensor data
- Derived several new features from an expansive study of maritime engineering literature
- Presented findings to company's board in a weekly meeting and through expanding a Confluence knowledge base
- Wrote 4 internal blogposts, easing onboarding process for future interns

Research Intern — Brussels, BE
Awell Health — Aug 2020 – Sep 2020
- Devised a proof-of-concept for automated patient treatment tracking using business process modelling (BPM)
- Customized open-source code of Camunda, a BPM tool written in Java

ACTIVITIES

Exchange Student at The University of Melbourne — Feb 2022 – Jun 2022

Volunteer — Ghent, BE
VTK Gent (Association of Engineering students at Ghent University) — Jul 2020 – Aug 2021
- Organized a job fair with over 140 attending companies and around 1000 students with a team of 8 volunteers
- Maintained relations with 80 large companies

Volunteering Project Student — Ghent, BE
Humasol VZW — Sep 2019 – Aug 2020
- Designed a solar powered pump installation with a power of 20 kW and 120 panels for a remote town in Senegal
- Supplied around 3400 people and town's livestock with a cheap and reliable source of water
- Reduced maintenance and fuel cost by over €8000

Teacher — Jul 2016 – 2022
- Leading a team of 5 trainers teaching catamaran sailing at sea to groups of up to 30 children during summer holidays
- Tutored over 10 high school and university students in mathematics, statistics and physics

TECHNICAL SKILLS

- **Programming Languages:** Python, Matlab, C/C++, VHDL, LabView
- **Frameworks:** TensorFlow, Scikit-learn, Keras, Kedro, Simulink, (Py)Cuda, (Py)OpenCL
- **EE Tools**: CST Microwave Studio, ADS, Vivado, EAGLE, VPIphotonics, LTspice, L-Edit, Cadence