Mario van Rooij

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Education

2017–2020	**Bachelor**, *University of Amsterdam*, Amsterdam - Netherlands, *Physics and Astronomy*.
	Calculus, Astrophysics, Condensed matter, Programming for Physics and Astronomy, Research practicum, Theoretical Solid State Physics
2019–2020	**Exchange semester**, *Humboldt Universität*, Berlin -Germany, Physics.
2020–Present	**Master**, *University of Amsterdam*, Amsterdam - Netherlands, *Computational Science*.
	Complex System Simulation, Numerical Algorithms, Agent-based Modelling, Evolutionary Computing, Large Scale Data Engineering, Stochastic Simulation, Scientific Computing, Advanced Numerical Methods in Many Body Physics, Machine Learning for Physics and Astronomy, Programming Multi-core and Many-core Systems, Uncertainty Quantification
2022–Present	**Thesis Internship**, *TNO*, The Hague, Privacy Preservation in Machine Learning.
	Researching new methods for secure, efficient Federated Learning in Image Analysis

Experience

2016–2020	**High School Tutor**, *Bijlesmeester & 4YoungTalent*, Alkmaar.
	Assisted students on an individual level with high school curriculum and working with a team of others to prepare high school students for their final exams.
2017–2020	**Physics Fair Assistent**, *University of Amsterdam*, Amsterdam.
	Assisting in setting up physics fairs for the University of Amsterdam. Visitors come in and expect a tour in which I assisted. This also gave me the chance to excite the younger public for physics.
2019–2021	**Teaching assistent**, *University of Amsterdam*, Amsterdam.
	Assisting in the course: Condensed Matter, Statistical data analysis for Physicists, Information retrieval, and Introduction to Computational science

Languages

Dutch	Native	
English	Fluent	
German	Intermediate	*Humboldt Language Center*

Knowledge Area

Physics	Condensed Matter: Two courses on the topic and bachelor thesis using density functional theory.
Progamming	Django, Databricks. Python, C: Participated in physics projects. Experience using multi-processing (including Cuda) and machine learning. Have been programming in python for 1.5 years. Experience with PyTorch, Numpy, Horvod.