

Arya Prasetya

Curriculum Vitae



Personal Information

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Nationality Indonesian
Birthdate and Place 06.04.1997, Abu Dhabi (UAE)

Education

- 04/2022 - 04/2026 **M.Sc. Scientific Computing**, *Technische Universität Berlin*, Berlin, Germany, Specialization in Numerics and Linear Optimization with Applied Disciplines in Physics and Quantum Computing. Master's thesis: *Comparative analysis of hierarchical approximate singular value decompositions for large structured matrices*.
Grade: **1,4** (ECTS equivalent of A)
- 10/2016 - 07.2021 **B.Sc. Physics**, *Universität Leipzig*, Leipzig, Germany, Specialization in Theoretical Physics. Bachelor's thesis: *Conventional superconductors in a magnetic field: The vortex state*.
Grade: **1,2** (ECTS equivalent of A)
- 08/2012 - 06/2015 **International Baccalaureate (IB) Diploma**, *Kungsholmens Gymnasium*, Stockholm, Sweden, Specialization in Physics, Geography, and Visual Arts.
Grade: 35/42 (ECTS equivalent of B and German Abitur equivalent of 2,1)

Professional Experience

- 07/2022 - 04/2026 **Student Research Assistant at the Chair of Technical Acoustics**, *Technische Universität Berlin*, Berlin, Germany
- Benchmarking of C++ implementations of matrix multiplication for different types of matrices (dense, sparse, structured) and comparison with existing implementations (e.g., BLAS, MKL) for state space systems.
 - Theoretical analysis of hierarchical frameworks for matrix approximation, particularly hierarchical SVD, and their application to large structured matrices (Master's thesis).
 - Benchmarking of various Iterative Soft-Thresholding Algorithms (ISTA) for solving physical acoustic inverse problems.
- 07/2022 - 06/2024 **Student Research Assistant at the Chair of Geometry**, *Technische Universität Berlin*, Berlin, Germany
- Development of a Python library for projective geometry, pyDDG, for the efficient calculation and Blender visualization.
- 08/2021 - 06/2022 **Student Research Assistant at the Chair of Computational Hydrosystems**, *Helmholtz Center for Environmental Research (UFZ)*, Leipzig, Germany
- Unit-testing of FORTRAN code for the simulation of hydrosystems.
 - Development of a task-workflow management system for the automation of simulations and data analysis with MongoDB.

10/2017 - 07/2021 **Student Teaching Assistant in Physics, *Universität Leipzig***, Leipzig, Germany
- Teaching assistant for various physics courses, including mechanics, electrodynamics, and thermodynamics.
- Preparation/correction of exercise sheets and tutorials for various physics courses.

Skills

Languages

Indonesian	Native	
English	Native	TOEFL
German	Advanced	Goethe Zertifikat B1, Uni-Kurs B2
Swedish	Basic	Svenska grundskola B1 (Swedish primary school)

Software

Programming	Modern FORTRAN, C++, Python, MATLAB, React, JavaScript
Libraries	Pandas, PyTorch, TensorFlow, Matplotlib, NumPy, SciPy, Qiskit, Stim, Gurobi, CPLEX

Volunteering Experience

01/2019 - 12/2019 **Vice-Chairperson, *Indonesian Student Association in Leipzig (PPI Leipzig)***, Leipzig, Deutschland
Local chapter of an Indonesian student association in Leipzig. Managed a team of 12 members.

01/2024 - 12/2024 **Vice-Chairperson, *Indonesian Student Association in Berlin-Brandenburg (PPI Berlin-Brandenburg)***, Berlin, Deutschland
Local chapter of an Indonesian student association in Berlin-Brandenburg. Managed a team of 95 members.

01/2024 - now **Chairperson and Founder, *Nusantara Indonesischer Allgemeiner Sportverein e.V. (NIAS e.V.)***, Berlin, Deutschland
Founded a sports club for the Indonesian community in Berlin, with a focus on badminton and futsal. Currently numbering around 39 members.



Berlin, 27.05.2026, Arya Prasetya