

HENRIK KONRAD ARNESJÖ

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Mechanism design, matching markets, and computational approaches to resource allocation. My research focuses on the design and analysis of allocation mechanisms under complex institutional constraints, with particular interest in the intersection of classical matching theory and machine learning-based mechanism design. I am motivated by questions where theoretical rigour connects directly to policy: how public institutions allocate access to education, housing, and labour, and how those systems can be made more efficient, stable, and fair.

EDUCATION

- 2023-2025 **MSc in Economics, University of Copenhagen, Denmark**
Specialisation: Microeconomics, Game Theory and Mechanism Design
- **GPA: ECTS A** (Danish Grade 10.4). Grades of 12/A in Thesis, Behavioural and Experimental Economics, Contract Theory, and Industrial Organization.
 - **Thesis:** *Mechanism Design and the Structure of University Admissions: A Theoretical Analysis of the Centralised Allocation Mechanism in Sweden* (Grade: **12/A**, supervised by Asst. Prof. Egor Starkov). Formally modelled Sweden's two-round, quota-based admissions procedure and proved, via propositions and theorems, that it is unstable, student Pareto-suboptimal, and susceptible to strategic manipulation. Identified and applied the Deferred Acceptance Algorithm with Soft Bounds (Ehlers et al.) as a reform-contingent alternative, and designed a novel Two-Round Quota-Managed Top-Trading Cycles (2RQMTTC) mechanism operable within the existing legal framework, with formal proofs of round-level strategy-proofness and Pareto-efficiency.
 - **Method:** Calibrated Monte Carlo simulation in Python (1,000 students, 40 universities, 500 runs) comparing five mechanisms across aggregate welfare, blocking pairs, and justified-envy metrics; results corroborated theoretical findings and produced a quantitative policy menu for reform.
- 2018-2022 **BSc in Business Administration, University of Cologne, Germany**
Specialisation: Microeconomics, Statistics, Economic Geography
- **GPA: ECTS A** (German Grade 1.4)
 - **Thesis:** *Sustainability in Cluster Development: The Case of Kista Science City, Stockholm* (Grade: **1.0/A**). Constructed a hybrid "Resilient Triple-Helix" analytical framework combining Etzkowitz's Triple-Helix Model with Suire & Vicente's cluster resilience theory; applied it via qualitative expert interviews (Mayring content analysis) to explain Kista Science City's long-run economic sustainability. Identified theoretically unpredicted mechanisms (including Ericsson's risk-taking culture and private investor substitution for state support) as primary resilience drivers.
 - Completed elective in Auction Theory and Matching Markets (Prof. Alexander Westkamp), directly motivating subsequent specialisation in mechanism design and the choice of Copenhagen for graduate study.

RESEARCH AND ACADEMIC PROJECTS

- 2024 **Equity Premium Puzzle - Behavioural and Empirical Asset Pricing**
- Independently sourced and cleaned macroeconomic data from multiple platforms; built and compared Python-based models to analyse equity risk premia, volatility, and return predictability during major financial crises, applying behavioural finance models and quantitative forecasting techniques.
- 2022 **Brain Drain in Bangalore's IT Sector** (Volunteer Research Project)
- Contributed to a research project investigating talent retention challenges in Bangalore's technology sector; assisted in developing policy recommendations to reduce skilled emigration.

WORK EXPERIENCE

- Summer 2023 **Commercial Analyst – Boscus AB** (Stockholm, Sweden)
- Conducted competitor and pricing analysis across 10+ companies; produced a quantitative model that informed strategic market positioning.
 - Supported the design and launch of a new direct-to-consumer sales channel, advising on go-to-market strategy and operating model.
- 2019-2021 **Academic Tutor** (Cologne, Germany)
Mathematics, Physics, Economics, English
- Developed ability to communicate complex analytical material accessibly and precisely, directly relevant to teaching obligations within the PhD programme.

HONOURS AND AWARDS

- **DPG Abitur Prize:** Awarded by the Deutsche Physikalische Gesellschaft for outstanding achievement in physics (2018).

LANGUAGES AND TECHNICAL SKILLS

- **Programming and computation:** Python (Monte Carlo simulation, NumPy, pandas), Stata, R, MATLAB, OxMetrics, Latex
- **Languages:** English (C2), German (C2), Swedish (C2), French (B1), Danish (B1)