



Daniel Mikkola

Data Scientist & Astronomer

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- Swedish
- LinkedIn profile
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About Me

Half-swedish, half-finnish I was born outside Stockholm and fell in love with Skåne. I identify as a data scientist because manipulating large datasets, revealing structures and patterns in them, has become something I am not only very familiar with but something I find very engaging. Nothing makes time fly like hunting through data.

Key Skills

- Scientific Modelling
 - Formulating problems
 - Building models/solutions
 - Analyzing result
- Statistical Analysis
- Data Visualisation and Presentation

Computer skills

- Python, MATLAB, C++, Unity, SQL
- Linux, Bash, Git, Github, Latex

Languages

- Swedish ●●●●●
- English ●●●●●
- Danish ●●●●●

My goal

I have worked as a data scientist within academia for the past few years and now I am looking to further develop my skills for producing solutions and answer from data. My goal is to become an expert on transforming data into valuable insights.

Working Experience

2017 – 2022 **PhD Researcher** Lund University
Worked with the largest data sample in the field to identify new classifications of stars, making predictions from from incomplete data.

- Performed numerical simulations of $\sim 10^6$ interacting particles
- Wrote machine learning algorithm for classification of stars
- Made SQL-like queries to extract specialized data
- Built tools to process, analyse and visualise output

Communication is a prized skill developed during my work. I have been invited to present my research to people within and outside of my field. I know how to explain complex topics to a wide audience.

Learning and teaching is a skill I value highly. I learn quickly as I have had to familiarise myself with new codes and tools to perform my research. I also developed and taught a course in python programming to master students.

Organisational restructuring occurred at Lund Observatory during 2022, moving staff between departments. During this time I was very involved with the employer and given responsibility for ensuring staff and student rights were treated fairly. Can be read about here: <https://www.dn.se/sverige/konflikten-som-knackte-en-hel-institution/>

2017 – 2022 **Outreach Worker** Lund University
I was responsible for **The Physics and Lasershow** at LU that arranges 70-80 science shows yearly for young adults and the general public.

Education

2017 – 2022 **Ph.D Astronomy & Astrophysics** Lund University
Five years of graduate studies including research, student union volunteering, and up to a year's worth of courses in topics like: programming, data analysis, statistical tools, machine learning, etc.

2016 – 2017 **M.Sc, Astronomy and Astrophysics** Lund University
Continuation of Master's degree with thesis work. Resulted in master's thesis:
Radial migration of stars, measured in N -body simulations

2016 – 2017 **M.Sc, Astronomy and Astrophysics** Aarhus University
One year of intensive courses at Aarhus University in Denmark.

2012 – 2015 **B.Sc, Physics** Lund University
Bachelor's studies spanning a wide range of physics topics. Resulted in bachelor's thesis:
Formation of super-Earths via pebble accretion onto planetesimals


Awards

2020 105 000 SEK Research grant Walter Gyllenberg foundation

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Publications

See LinkedIn for publications, or:
 Astrophysics Data System

Memberships & Qualifications



Academimusicorpset - A student orchestra, member #445



www.padi.com - PADI certified Open Water Diver & Dry-suit diver



Swedish driver's license, B

Experience Highlights

Machine Learning

Introduction to Deep Learning. A PhD level course I have taken introduction the basic concepts of deep learning. We used python libraries like Keras and Tensorflow.

Teaching programming

[Introduction to Python programming](#). I developed and taught this crash-course in Python programming for undergraduate students with a focus on data manipulation.

Media

As part of my second publication, I made a press-release explaining my research for a broader audience which was a good exercise in communicating a technical subject to people without expert knowledge. [The press-release can be seen here](#)

Volunteering

2021 – 2022

Workplace Representative

ST Labour Union

Towards the end of my employment as a PhD student at Lund University I got involved with my labour union. I spent my last year dealing with union-related work beside my studies.

2017, 2018, 2020

PhD student representative

NDR The Science Doctoral Student Council

I was involved with the student council at my department. I was a representative in the Astronomy Advisory Group and in the Department board.

2013 – 2015

Board member

LUNA The Science Student Union

During my bachelor's and master's education I was involved in the undergraduate student union. Primarily I was in the union board, but I also helped out in other areas. For example, in 2016 I organised the revival of LUNA's formal ball.