Kris A. Veeken

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SUMMARY

I am a recent graduate with an MSc in Biology, looking for technical challenges that will allow me expand and deepen my skills in programming, statistics and mathematical modeling.

EDUCATION

Rijksuniversiteit Groningen
Master's degree Biomolecular Science
September 2018 - August 2021
Weighted GPA: 8.4/10 (121 ECTS)

Rijksuniversiteit Groningen
Bachelor's degree Biology (Molecular Biology)
September 2014 - August 2018

SKILLS

Programming: Python, C++, R, Clojure
Computing: RegEx, shell scripting, LaTeX
Laboratory: Molecular biology techniques and safe conduct, basic organic chemistry
Soft: Academic writing and presentation

MASTER'S PROJECTS

Automation of optical tweezer protein unfolding experiment analysis **Jan - May 2021**
Groningen

Set out to develop a user-friendly way to automate the analysis of optical tweezer data, which could be obtained at a high rate compared to the work of analysis by hand. Tackled a wide variety of problems: applied statistics, signal processing, sanitizing data, user experience and more. The end product is a literate programming environment where a user is guided through the steps of performing bulk analysis.
Learned about different powerful statistical methods, as well as some of the realities of software development.

- **Tools:** Python, Lumicks Bluelake
- **Supervisor:** Kasia Tych (RUG)
- **Link:** `github.com/kaveeken/tweez-CV`

Modeling speciation in self-replicating molecules **Feb - Aug 2019**
Groningen

Improved and implemented a simplified model of molecular self-replication, with the aim of applying knowledge from evolutionary biology to the systems chemistry of self-replicating molecules. Developed visual and statistical methods to describe the emergent *speciation-like* behavior in the modeled system. Provided a basis for scientific publication and held many presentations on the work, the highlight of which an appearance at a scientific conference.
Learned much about how to analyze and reflect on large sets of numerical simulations, as well as how to effectively work and communicate in a multi-disciplinary setting.

- **Tools:** C++, R, high-performance computing
- **Supervisors:** G. Sander van Doorn (RUG),
  Omer Markovitch (Origins Center, RUG)
- **Link:** (privated) github.com/kaveeken/master-replicators

WORKING EXPERIENCE

Teaching assistant: Modeling Life **January 2020**
Groningen

Supported students in learning the basics of mathematical modeling through interactive working group sessions. Developed supporting information for lecturers and fellow assistants. Provided feedback as well as solutions during the tumultuous introduction of a brand-new course.

GRADES

• Advanced statistics	8.5
• Colloquium: Biophysics of nanopore transport	7.5
• Masters Research Project 2 (see above)	8.0
• Essay: High-throughput screening of ionic liquids using molecular dynamics	9.0
• Molecular Dynamics	9.0
• Tools and Approaches of Systems Biology	7.5
• Master's Research Project 1 (see above)	8.5
• Programming C++ for Biologists	9.0
• Biological Modeling and Model Analysis	8.5
• Mathematics in the Life Sciences	8.0

EXTRA-CURRICULAR

Several commissions spanning multiple years for the student association Unitas S.G. related to the organization and conduct of social activites.

PERSONAL PROJECTS

kde-clj **Q1 2022**

Implementation of kernel density estimation, featuring easy and efficient access to the (analytical) derivatives and integrals of estimated density functions.

- **Tools:** Clojure
- **Link:** `github.com/kaveeken/kde-clj`

binance-clj **Q3 2021**

Designed and wrote a REST API wrapper for the cryptocurrency trading platform binance.com. The goal of the project was to learn to be independent of existing API implementations, and to gain freedom in the choice of language to use in projects that interface with APIs. The end result offers convenient ways of accessing market and account data, and allows placing various kinds of orders.

- **Tools:** Clojure
- **Link:** `github.com/kaveeken/binance-clj`

Algorithmic trading **2018-present**

A long running project has been to test and implement automated trading strategies. Aside from the material incentives, markets are very complex systems which are enticing to try to understand and "beat". While these attempts are unlikely to yield more than mere pocket change, there is much to learn along the way. This way I have grown in writing performant simulation code, as well as in traversing the jungles of data those simulations generate.

- **Tools:** Python, C++, R, SQL, Clojure

PERSONAL INTERESTS

- Home computing/electronics/automation
- Cooking
- Tea
- Golf