Daniel Ploug Hall

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Profile

Computational physicist with 2 years of professional experience with Software development withstrong verbal communications skills and strong in numerical mathematics. I have previouslyworked with maintaining and expanding relational databases, writing data pipelines in python andusing my analytical approach to find and eliminate obscure bugs.

Professional qualifications

- **Languages:** Python, SQL, C (GCC), C++ (GCC)
- **Databases:** Postgres, Oracle
- **Python Libraries:** Psycopg3, OracleDB, Requests, Numpy, Scipy, Matplotlib, Seaborn, Pandas
- **Version Control:** Git, TortoiseSVN
- **Tools:** Make, CMake
- **Data science:** Curve fitting, Data visualization, Data analysis
- **Parallel interfaces:** OpenMP, MPI
- **Numerical methods:** Finite volume method, Finite difference method, Numerical optimization, Leapfrog integration, Gaussian Quadature

Personal qualifications

- Verbal Communicator
- Independent worker
- Helpful
- Detail orientated
- Curious

Working Experience

Software developer at Septima - Nov 2023 - Aug 2024

- Development of APIs, used by their web service
- Development of the main database such as implementing new features.
- Ad hoc assignments for costumers, which include but not limted to route calulations

PhD student at Dansk brand- og sikrings institut and KU - Jun 2022 - May 2023

- Research into moisture transport in fire retarded wood
- Balancing KU and DBIs interest in the project

Postgres and Python developer at Danmark Statistik - Nov 2021 - Jun 2022

- Custom datapipelines from files into Postgres
- Developing Postgres and Oracle databases
- Development of an easy to use privileges system in postgres
- Solved a years long problem with PyInstaller and MKL

TA at Datalogisk Institut (DIKU, KU) in Numerical Methods - Sep - Nov 2020

- Teaching 20+ student

TA at Datalogisk Institut (DIKU, KU) i Computational Methods in Simulation - Apr - Jun 2021

- Grading assignments

TA at the Niels Bohr Institute in High-Performance Parallel Computing
- Feb - Apr 2021
- Teaching 15+ people

Education - University of Copenhagen (KU)

Master in Physics with a specialty in Computational Physics - Sep 2019 - Jun 2021
- Average grade: 10.2
- Thesis im "Dust dynamics in a collapsing Prestellar core" under Troels Haugbølle
- Developed a post-processing dust simulation for one of my supervisors codebases

Bachelor In Physics with a speciality in Astrophysics - Sep 2016 - Jun 2019
- Average grade: 7.4
- Bachelor Project in "Dust dynamics in a protoplanetary disk" under Troels Haugbølle
- Recreated a 1D protoplantary disk simulation with dust coagulation

About me

In my spare time you can find me at my club archery range, practicing my archery skills and making medieval jokes with a friend of mine. Furthermore I engage a lot with my biggest hobby, which is tabletop role playing games. Here I do everything from reading and playing to statistical analysis. This interest has led me to develop a dice statistical library, in which I can model the various unique dice mechanics I come across and make myself. I also love nature and once a year go hiking with my friends.