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Göteborg, Sweden

Profile

Senior software engineer with 15 years of professional experience in research environments. Specialist in Python and computational life sciences. Broad skill base including requirements gathering, user experience testing, QA, performance analysis, porting, training, and support. Self-employed consultant since 2000.

Recent major clients

(unlisted), 2010-present

This contract does not allow me to use the client's name in advertising. Please contact me for details. Summary: I developed MySQL extensions for chemistry and used them to develop a rich client intranet application based on jQuery-UI and Knockout.js.

(unlisted), 2010

This contract does not allow me to use the client's name in advertising. Please contact me for details. Summary: I provided an external report evaluating my client's software requirements and available market solutions.

AstraZeneca AB, Sweden, 2001-present

Principal developer of PyDrone, a molecular property and model prediction tool. Its dependency system ties together dozens of different command-line, database, and web tools into a simple command-line program. I integrated components written in everything from FORTRAN to Delphi and R to Java and worked around undocumented failure cases. Where needed I wrote new analysis components or rewrote existing ones for better performance or stability.

Other projects included the initial UI design of the C-Lab web application which calls PyDrone, ongoing performance analysis, the port from IRIX to Linux and between different cheminformatics toolkits, and a web-based tool for toxicology prediction.

Python training, 2006-present

I taught introductory and intermediate courses in Python programming to graduate and postdoc students in South Africa. I currently teach about four corporate training courses per year designed for researchers in computational chemistry. My two main courses cover Python programming and web applications development with Django.

Earlier employment

Co-developer of VMD, an OpenGL-based molecular structure visualization application. Product lead for DiscoveryBase, a turnkey intranet bioinformatics web server. Senior engineer at Bioreason, which developed data mining tools for chemical data.

Education

University of Illinois, Master's degree in Physics, 1993.

Florida State University, Bachelor's degrees in Mathematics, Physics, and Computer and Information Science. 1992.

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Science and Research

Most of my work is firmly rooted in software development for the physical sciences. My long term contracts have dealt with biological and chemical systems, but a short term contract with Caran AB on fusing vehicle sensor data with GIS and weather prediction was quite fascinating. I am very used to working with non-programmer domain experts and I enjoy the fluidity of a research environment.

Python

I have delivered software in Python, C/C++, Javascript, Perl, and Tcl. I have used Python full-time since 1998 and I know most of the tools in the Python ecosystem. I am a member of the Python Software Foundation, which owns the copyright to Python, and I am a Python core contributor. I regularly present at the PyCon and EuroPyCon conferences. Past lectures include coroutines in Stackless Python, a comparison of PLY and PyParsing for parsing a domain specific language, and techniques for performance analysis. I co-founded the open source bioinformatics package Biopython. I co-founded GothPy, the Göteborg Python user's group, and organized its first conference in 2010.

Programming Training

I provide various levels of training. My web site contains essays on different software techniques, from the technical details of implementing population count or subgraph enumeration to my more humorous LOLPython language. I teach programming to research scientists on everything from introductory programming to advanced topics in Python/C integration and web applications development. I also provide code reviews and one-on-one advice on how to be a more effective programmer. My advice may include recommendations for choice of technology, architecture, version control, testing frameworks, and development methodologies.