

Wolfgang Beyer

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Experience

Software Developer

Remotely from Vienna, Austria

COMPUTATIONAL GENOMICS LABORATORY - UNIVERSITY OF CALIFORNIA SANTA CRUZ

Mar. 2017 - Present

- Developing "Sequence Tube Maps", a JavaScript module to display genomic sequence graph data structures, which cannot be displayed by existing genome browsers.
- Building a web application to interactively query and visualize existing genomic variation graphs.

Visiting Researcher/Developer

Santa Cruz, USA

COMPUTATIONAL GENOMICS LABORATORY - UNIVERSITY OF CALIFORNIA SANTA CRUZ

Nov. 2016 - Jan. 2017

- Continued development of "Sequence Tube Maps" in cooperation with the graph genomes group.

Google Summer of Code Intern

Remotely from Vienna, Austria

EMBL - EUROPEAN BIOINFORMATICS INSTITUTE (CAMBRIDGE)

May 2016 - Aug. 2016

- Started development of "Sequence Tube Maps".
- Developed an algorithm which generates clearly laid out representations of complex datasets and which scales well to bigger inputs.

Product Manager, Laboratory Manager, Systems Specialist

Vienna, Austria

ROCHE DIAGNOSTICS

Aug. 2012 - Apr. 2016

- Achieved a tender winrate of more than 70% (compared to a market share of 50%) by coordinating efforts to offer competitive tailor-made solutions.
- Designed solution for Austria's biggest private diagnostic laboratory allowing analysis of up to 200% more samples while keeping turnaround times constant.
- Accompanied implementation of new laboratory for Austria's biggest hospital, reducing turnaround time by 40%.
- Created various tools for the automatic analysis of laboratory equipment log files which allow pinpointing bottlenecks to improve workflow processes.

Professional Online Poker Player

SELF-EMPLOYED

2010 - 2012

- Applied mathematical (probability theory, statistics, game theory) and psychological skills.
- Proved ability to make rational decisions under high pressure.

Education

Bachelor in Software and Information Engineering (in progress), current GPA 4.0

Vienna, Austria

TECHNICAL UNIVERSITY OF VIENNA

Mar. 2016 - Present

- Focus on general coding and algorithmic skills

Master in Molecular Biology, GPA 4.0

Vienna, Austria

UNIVERSITY OF VIENNA

Oct. 2003 - Nov. 2010

- Thesis: "RNA Secondary Structure Prediction including Pseudoknots": Collaborated on the development of a novel algorithm with fewer restrictions than previous ones. Code is part of the "ViennaRNA Package" which is being used worldwide for computational RNA biology research. Written in C.
- Majors: Bioinformatics, Structural Biology, Genetics

Exchange Semester and Research Internship

Lisbon, Portugal

UNIVERSIDADE NOVA DE LISBOA AND INESC-ID

Jan. 2007 - Jul. 2007

- Evaluated models to estimate parameters for metabolic networks based on time series data of metabolite concentrations (poster accepted at the German Conference of Bioinformatics 2007).

Master in Business Management and Administration, GPA 3.5

Vienna, Austria

VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS ADMINISTRATION

Oct. 1999 - Jun. 2004

- Thesis: "The Quadrature Method in Comparison with Other Methods for Valuing Barrier Options": Implemented various pricing models for exotic options and evaluated their performance.
- Majors: Business Management and Controlling, Finance

Online Courses

- Machine Learning (by Andrew Ng)
- Convolutional Neural Networks for Visual Recognition (by Fei-Fei Li and Andrej Karpathy)
- Reinforcement Learning (by David Silver)

Projects

AI Agent for Deuce to Seven Heads Up Poker

www.playmybot.com

- Developed an application which uses Counterfactual Regret Minimization to determine a strategy for playing Deuce to Seven Heads Up Poker. This is to my knowledge the only (public) AI for this poker variant.
- The strength of the AI strategy is comparable to human level players according to my preliminary testing.
- Built a web application in Node.js to allow anyone to play against the AI and to gather feedback about its competitiveness.
- Currently preparing to publish the code as open source software.

Sequence Tube Maps

www.github.com/wolfib/sequenceTubeMap

- A JavaScript module for the visualization of genomic sequence graphs which automatically creates a "tube map"-like visualization of a given sequence graph.
- In addition to nodes and edges, sequence graphs contain the notion of paths and can therefore not be properly displayed by standard graph visualization tools. Developed a custom algorithm which lays out the graph's components and generates a visualization which displays the relevant information in an intuitive way.

Tutorial for Image Recognition with Tensorflow

www.wolfib.com/Image-Recognition-Intro-Part-1

- Teaches the principles of image recognition via practical examples in TensorFlow. Intended audience are people with some programming experience, but no prior machine learning knowledge.
- Covers softmax classifier, fully-connected neural nets and convolutional neural nets (part 3 not published yet).
- Has been published by freeCodeCamp, one of the biggest publications on medium.com with almost 200k followers.

Computer Skills

- Java, JavaScript, Python, HTML, CSS

Languages

Native Speaker German

Fluent English

Basic French, Portuguese

Achievements

- Participated in the International Mathematical Olympiad 1998 in Taiwan after placing 5th in the Austrian nationwide competition.

Hobbies and Interests

Scout Leader Organized domestic and international camps for dozens of participants.
Supported a local NGO in accomodating asylum seeking families.

Mountain and Water Sports Hiking, Vie Ferrate, Rock Climbing, Surfing, Kite Surfing

Competitive Coding