Sam Hertig, PhD

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Aperçu

Building bridges that connect minds by programming impactful medical software and data visualizations ◆ Dedicated to writing clean code using agile methodologies and test-driven software development ◆ Fifteen years of teaching experience ◆ Ability to visualize complex data and concepts ◆ Empathizing with a wide range of users and audiences

Professional Experience

Comerge AG, Switzerland (comerge.net)
Software Engineer, Project Lead Medical 1/2021 – present
Visualization Engineer 9/2018 – 12/2020

- Project lead overseeing the development of medical mixed reality software, from inception to market introduction (client: incremed.com)
- Team lead of a small team of software developers
- Aligning software development efforts with quality and regulatory affairs; involved in risk management, requirements engineering, and usability tests

Junior Software Engineer 9/2017 – 8/2018

- Front-end software development, implemented interactive data dashboards that are viewed by thousands of users (client: Connect Solutions)

Hertig Visualizations, Switzerland (samhertig.com)
Scientific Visualization Specialist 1/2016 – present

- Freelance work in scientific visualization, data visualization, infographics, and web programming
- Holding workshops on scientific visualization for university students and scientists, these workshops have received excellent participant feedback
- Selected clients: ETH Zürich, EPF Lausanne, University of Basel, Karlsruhe Institute of Technology, Stanford University, UC San Francisco, University of Lisbon, Clarafi.com, and Comerge AG

Stanford University, USA 4/2015 – 12/2015
University of California, San Francisco, USA 5/2013 – 3/2015
Postdoctoral Researcher

- Developed software tools for analysis and visualization of biomolecular data of large spatial or temporal extent, including contributions to the leading molecular visualization software www.cgl.ucsf.edu/chimera with over 370k downloads
- Teaching assistant for object-oriented programming at UC San Francisco
- Awardee of a postdoctoral fellowship by the Swiss National Science Foundation
- Earned the Best Poster Award at the 2015 conference for Visualization of Biological Data, Boston, USA

Education

PhD in Science, ETH Zürich, Switzerland 3/2012

- Discovered a mechanism by which pathogenic bacteria can sense mechanical force using molecular dynamics simulations of proteins
- Presented research at international conferences, secured grants for supercomputing resources, published research in high-impact, peer-reviewed publications, and granted one U.S. patent

MSc in Physics, University of Bern, Switzerland 5/2007

- Minor subjects: mathematics and astronomy

Areas of Expertise

- **Programming:** C#, JavaScript, AngularJS, Python, Git, and basics of Java and SQL
- **3D & data visualization:** Mixed Reality, Microsoft HoloLens 2, Unity3D, Three.js, D3.js
- **Visual communication & graphic design:** Adobe Illustrator, Photoshop, basics of AfterEffects and Autodesk Maya
- **Teaching & mentoring** (high school, undergraduate, and graduate students)
- **Broad knowledge of science** (physics, math, astronomy, biology)
- **Languages:** English (fluent), German (fluent), French (conversational), Swiss-German (native)

Selected Publications

- S. Hertig, N. R. Latorraca, R. O. Dror. *Revealing Atomic-Level Mechanisms of Protein Allostery with Molecular Dynamics Simulations.* PLoS Computational Biology (2016).
- G. T. Johnson and S. Hertig. *A guide to the Visual Analysis and Communication of Biomolecular Structural Data.* Nature Reviews Molecular Cell Biology (2014).
- M. Chabria*, S. Hertig*, M. Smith, V. Vogel. *Stretching Fibronectin Fibres Disrupts Binding of Bacterial Adhesins by Physically Destroying an Epitope.* Nature Communications (2010). * co-first authors.
- Complete list: bit.ly/2lGz5hp

Interests

- Electric Bass
- Analog and digital photography www.flickr.com/people/188108159@N06