

Israel Huff

Oak Ridge National Laboratory
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Employment

ORNL (UT-Battelle)

Software Developer, Nuclear Security Modeling – May 2019 – present.

- Software development in support of research
- Multi-platform Qt user interface applications (C++)
- Data analytics (Python, numpy, scipy)

Siemens

Software Engineer, Staff – Jan. 2017 – May 2019.

- Lead engineer and Scrum master responsible for data acquisition
- Redesigned existing code to support 10GbE TCP-based data acquisition and simulation
- Ported and optimized data-processing code from R&D to production quality
- Worked with counterparts on other teams to replace web service/WCF communications code with TCP
- Responsible for diagnosing software and hardware issues both from on-site hotcells and customer sites

Software Engineer, Sr. - Jan. 2013 – Jan. 2017.

- Writing C++, managed C++ (C++/CLI) and C# code to support data acquisition from PET systems
- Internal and external communications using WCF
- User interface design with ASP.NET C#, JavaScript, HTML/CSS, WinForms
- Simulated PET data creation and acquisition with C++, OpenMP, CUDA

Emory University (Emory Genetics Laboratory)

Software Developer Analyst, Sr. – Dec. 2011 – Jan. 2013.

- Wrote C++ and Perl codes for analysis of clinical bioinformatics data
- Optimized pipeline to scale up from tens of genes to thousands (from gene panels to whole exome analysis)

ORNL (ORAU)

Post Masters Research Associate – May 2008 – Nov. 2011.

- Modified and documented existing codes to improve usability and portability (Python, PHP, MySQL)
- Wrote numerous codes to analyze scientific data and run on various clusters (C++, MPI, Python, Perl, PBS)
- Wrote Java/Swing GUI application for analyzing microarray/tiling array data
- Sysadmin for several desktop machines (Red Hat) and a 16-node cluster (Rocks)

University of Tennessee

Research Assistant (Software Developer) – Jan. 2007 – Aug. 2008.

- 3D scientific visualization applications (C++, Perl)
- Web-based user studies and on-demand 3D rendering web application (HTML/CSS, JavaScript, PHP)
- JNI interface for Tobii eye-tracking system with Swing UI (Java/Swing/JNI, C)

Teaching Assistant (TA), Interactive Computational Simulation – Aug. – Dec. 2006.

- Ported 3D visualization code from Linux to Windows (Cygwin) and documented the process (C++)
- Compiled and installed various Linux tools for student use

Utility Software Solutions, Inc.

Contract Software Developer – May 2007 – Jan. 2008.

- Wrote client for SCADA control program for controlling power grid capacitor switching (Java/Swing/JNI, C, SQL)
- Contributed to electric meter data management web interface (PHP, HTML/CSS, SQL)

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Education

- 2008 MS Computer Science. University of Tennessee, Knoxville.
PILOT: “**Ensemble Visualization of Water**”. Advisor: Dr. David Banks
- 2005 MS Biochemistry, Cellular, and Molecular Biology. University of Tennessee, Knoxville.
Thesis: “**Anti-amyloid antibodies as probes of amyloid fibril structure**”. Advisor: Dr. Ronald Wetzel
- 2001 BS Biological Sciences. University of Tennessee, Knoxville.

Publications/Presentations/Posters

(Poster) PET Data Acquisition: Preparing PETLINK for the Coming Decades. IEEE 2018 Nuclear Science Symposium and Medical Imaging Conference. W. F. Jones, A. P. Moor, I. J. Huff.

(Presentation) Studying Effects of Missing Data for Clinical TOF PET. IEEE 2018 Nuclear Science Symposium and Medical Imaging Conference. G. Bal, V. Y. Panin, I. J. Huff, C. Michel, J. Young, F. Kehren.

Halo Water: Ensemble Visualization Distinguishes Configurations Near Nanotubes. Journal of Computational and Theoretical Nanoscience. Israel Huff, Chris Weigle, and David C. Banks. Journal of Computational and Theoretical Nanoscience, vol. 11, issue 1, pp. 8-14. 2014.

Molecular diagnostic testing for congenital disorders of glycosylation (CDG): Detection rate for single gene testing and next generation sequencing panel testing. Molecular Genetics and Metabolism. Melanie A Jones, Devin Rhodenizer, Cristina da Silva, Israel J Huff, Lisa Keong, Lora J H Bean, Bradford Coffee, Christin Collins, Alice K Tanner, Miao He, Madhuri R Hegde. Sep-Oct;110(1-2):78-85. 2013.

(Presentation) Ensemble-Space Visualization Improves Perception of 3D State of Molecular Dynamics Simulation. Israel Huff, Chris Weigle, and David C. Banks. Proceedings of the 5th symposium on Applied perception in graphics and visualization: 163-170. 2008.

Modeling Studies of Anti-amyloid Antibodies Bound to A β . Anna S. Gardberg, Nathan Tanner, Israel Huff, Kimberly Salone, Ronald Wetzel, Chris Dealwis. American Crystallographic Association, Etter Transactions: Vol 1: 15-28. 2005.