John Hoffer

hof@alumni.harvard.edu | LinkedIn

EDUCATION

HARVARD COLLEGE

BA: 2016 | GPA: 3.51
Concentration: Neurobiology
Secondary: Computer Science

SKILLS

PROGRAMMING

Use on daily basis:
GLSL • Python • Slurm
JavaScript (D3 • Node • TypeScript)
Use in past projects:
C++ • PHP • SQL • MATLAB • LaTeX
Learning:
Lua • Haskell • Wolfram
CUDA • .NET • C#
Daily Workflow:
Bash • Tmux • Vim • RegEx

DESIGN

Current Projects:
Blender (Python API) • X3D • CSS
Frequent Usage:
3ds Max • Inkscape • Gimp

COURSEWORK

COMPUTER SCIENCE

Rendering and Image Processing
Dynamic & Stochastic Processes
Computer Graphics
Visualization

LIFE SCIENCES

Computational Neuroscience
Principals of Neuroengineering
Computational Cognitive Neuro.
Cellular Basis of Neural Function
Drug Discovery and Development

EXPERIENCE

HARVARD SEAS | Fellow

February 2016 — current | Visual Computing Group, Cambridge, MA

- Built a pipeline to render ray-tracings from CNN image reconstructions.
- Wrote a web server to handle terabytes of image data efficiently in real-time
- Contributed to 5 open source projects
- Developed several UIs to give the research community real-time collaborative access to neural reconstructions
- Negotiated deliverable APIs for a multi-million dollar grant

WYSS INSTITUTE AT HARVARD | Microfabrication Intern

February—August 2015 | Human Organs-on-Chips, Boston, MA

- Designed components for development of novel microfluidic cell culture assays
- Developed and tested improved microscale fabrication procedures

MASSACHUSETTS GENERAL HOSPITAL | Research Intern

June—August 2013 | Psychiatric Genetics Unit, Boston, MA

- Prepared DNA to correlate cognitive traits with single DNA base pairs
- Identified possible genes for future study through a literature review

KEY OPEN SOURCE PROJECTS

BUTTERFLY IMAGE SERVER January 2018 | Harvard VCG | Github Link

- Primary developer of terabyte-scale image server in daily use for automated and interactive evaluation of CNN image reconstructions.

OPENSEADRAGON GL January 2017 | OpenSeadragon | Github Link

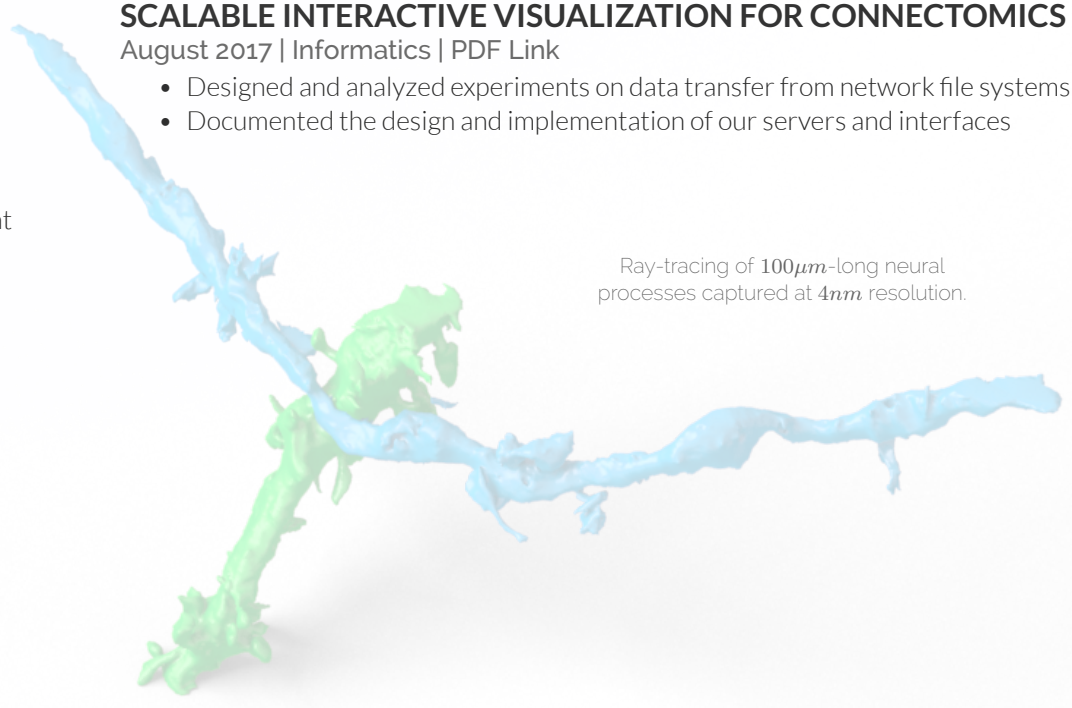
- Enabled real-time parallel image processing on large-scale images in browser.

JOURNAL PUBLICATIONS

SCALABLE INTERACTIVE VISUALIZATION FOR CONNECTOMICS

August 2017 | Informatics | PDF Link

- Designed and analyzed experiments on data transfer from network file systems
- Documented the design and implementation of our servers and interfaces



Ray-tracing of $100\mu m$-long neural processes captured at $4nm$ resolution.