Daniel S. Johnson

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Education

Stanford University, ***Stanford, CA*** *Exp. May 2023*
PhD: Computer Science
Stanford Graduate Fellow

University of Illinois at Urbana-Champaign, ***Urbana-Champaign, IL*** *May 2018*
Bachelor of Science: Computer Science, with Highest Honors ***GPA: 3.93/4.00***
Bachelor of Science: Physics, with Highest Honors
Minor: Mathematics

Experience

Stanford Artificial Intelligence Laboratory | Fedkiw Lab, ***Stanford, CA*** *June 2019 - Present*
PhD Student
- Construct mathematical framework behind combination eulerian/lagrangian fluids optimization project
- Design and code original numerical experiments for fluids project
- Contribute to physics postprocess to machine learning paper
- Write CUDA code to speed up physics postprocess
- Passed all 6 PhD qualifying exams for the ICME Program

Intel, ***Santa Clara, CA*** *June 2020 - September 2020*
Deep Learning and GPU Intern
- Developed analytical multi-frame super-resolution algorithm
- Investigated algorithm pipeline in the context of deep learning

National Center for Supercomputing Applications (NCSA) | LIGO Project, ***Urbana, IL*** *February 2017 - July 2018*
Computational Physics Intern
- Develop critical waveform extraction software called the **P**ython **O**pen Source **W**aveform **E**xtracto**R** (POWER)
- Present POWER at Einstein Toolkit Conference
- Member of Laser Interferometer Gravitational-Wave Observatory (LIGO) Scientific Collaboration
- Recognized as Outstanding Intern by Director of NCSA

Hybrid Illinois Device for Research and Applications (HIDRA) Fusion Reactor, ***Urbana, IL*** *January 2015 - June 2018*
Senior Undergraduate Research Student

Garmin | Aviation Department, ***Olathe, KS*** *May 2016 - August 2016*
Software Engineer Intern

Wolfram Research, ***Champaign, IL*** *September 2014 - February 2015*
Software Engineer Intern

Selected Publications

Orcid: 0000-0001-7717-5640

1. Z. Geng, **D. Johnson**, R. Fedkiw, "Coercing Machine Learning to Output Physically Accurate Results." Journal of Computational Physics, Nov. 2019, https://doi.org/10.1016/j.jcp.2019.109099.

2. **D. Johnson**, E. A. Huerta, R. Hass, "Python Open Source Waveform Extractor (POWER): An open source, Python package to monitor and post-process numerical relativity simulations." Classical and Quantum Gravity, Nov. 2017, https://doi.org/10.1088/1361-6382/aa9cad.

3. **D. Johnson**, K. Wegley, R. Rizkallah, A. Shone, D. Andruczyk, "HIDRA Control System (HCS): An open source, LabVIEW-based program to control the Hybrid Illinois Device for Research and Applications." Fusion Engineering and Design, Feb. 2017, https://doi.org/10.1016/j.fusengdes.2018.02.016.

Selected Honors & Awards

2018-Present	**Stanford Graduate Fellowship**, Stanford University College of Engineering	*Stanford, CA*
2017 - 2018	**Knight of St. Patrick**, University of Illinois College of Engineering	*Champaign, IL*
2017 - 2018	**C.W. Gear Outstanding Undergraduate Student**, UIUC Department of Computer Science	*Champaign, IL*
2016 - 2017	**Crowe Horwath LLP Outstanding Computer Science Student**, UIUC CS Department	*Champaign, IL*
2016 - 2017	**Dunn Systems Scholarship**, University of Illinois Department of Computer Science	*Champaign, IL*
2016 - 2017	**Robert M. Stephens Engineering Scholarship**, University of Illinois College of Engineering	*Champaign, IL*
2016 - 2017	**Illinois Engineering Achievement Scholarship**, University of Illinois College of Engineering	*Champaign, IL*

Skills

Programming C/C++, Python, LaTeX, Parallel Computing (CUDA, OpenMP, MPI), WebGL, Linux, Unity, Blender, VR
Math Numerical Linear Algebra, Numerical Optimization, Stochastics, Discrete Mathematics, Numerical PDEs