

MICHAEL E. ROWAN

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<https://mrowan137.dev>

EMPLOYMENT

AMD

Member of Technical Staff Santa Clara, CA (2021 – present)

- Performance optimization, debugging, porting, and development of applications for the forthcoming exascale supercomputer *El Capitan*.
- Spotlight Award (2024) for contributions to MI300 execution and product launch.
- Spotlight Award (2021) for on-site support at *Frontier* exascale supercomputer.

BERKELEY LAB

Postdoctoral Fellow Berkeley, CA (2019 – 2021)

- Performance optimization of particle-in-cell code *WarpX* for GPU+CPU platforms.
- Improved load balancing in *WarpX*, achieving 4× speedup in realistic use cases.
- Implemented GPU kernel timer using CUDA Profiling Tools Interface.
- Benchmarked AI/ML workloads run on HPC platforms.
- Co-organized *GPUs for Science 2020* training event.

EDUCATION

HARVARD UNIVERSITY

Ph.D. in Physics Cambridge, MA (2013 – 2019)

- Dissertation: *Dissipation of Magnetic Energy in Collisionless Accretion Flows*
- Awards: Purcell Fellowship, An Wang Fellowship, Wallace Noyes Fellowship

OBERLIN COLLEGE

B.A.s in Physics and Mathematics Oberlin, OH (2009 – 2013)

- Thesis: *Doppler-free Sat. Fluor. Spectroscopy of Li. Using a Stabilized Freq. Comb*
- Awards: NSF S-STEM Award for Computation & Modeling, Weinstock Prize in Physics, Stern Merit Scholarship in Natural Sciences, Phi Beta Kappa, Sigma Xi

SKILLS

Research, Programming (Python, C, HIP/CUDA), Debugging, Performance analysis

SELECTED PUBLICATIONS

M.E. Rowan, A. Huebl, K.N. Gott, J. Deslippe, M. Thévenet, R. Lehe, & J.-L. Vay (2021). “In-situ Assessment of Device-side Compute Work for Dynamic Load Balancing in a GPU-accelerated PIC Code.” In *PASC21: Proceedings of the Platform for Advanced Scientific Computing Conference 2021*.

M.E. Rowan, L. Sironi, & R. Narayan (2017). “Electron and Proton Heating in Trans-relativistic Magnetic Reconnection.” In *The Astrophysical Journal* 850 29.