Barik Boley

Rexburg, ID | barik.boley@gmail.com | (602) 668-6436 | U.S. Citizen
github.com/Barik-D-Boley | linkedin.com/in/barik-boley

EDUCATION

Brigham Young University–Idaho | ***B.S. in Mechanical Engineering*** *Expected April 2029*
GPA: 4.00 | ACT: 33 | 4-Year Merit Scholarship

- **Engineering Core:** Statics, Strength of Materials, Dynamics & Manufacturing Processes *(In Progress)*
- **Math & Computation:** Multivariable & Vector Calculus, Engineering Computation, Parametric CAD

SKILLS

- **Simulation & CAD:** MOOSE Framework, OpenMC, Coreform Cubit, ParaView, SolidWorks (CSWA), Autodesk Inventor
- **Programming & Tools:** Python (h5py, SciPy), Git, JavaScript, HTML/CSS, Excel & Google Sheets (Data Modeling)
- **Languages:** English (Native), Spanish (Professional Fluency—C1)

PROJECTS

Coupled OpenMC–MOOSE Microreactor Multiphysics | ***Independent Nuclear Project*** *September 2026 – Present*

- Simulated coupled multiphysics behavior of an HTGR microreactor RVE (TRISO/H-451 graphite) by engineering a 2-step OpenMC–MOOSE neutronics & FEA workflow
- Eliminated uniform heat assumptions by scripting a Python bridge (h5py, scipy) to parse OpenMC 3D spatial power tallies and map volumetric fission heating directly into MOOSE functions
- Prevented rigid-body modes by automating 10k HEX8 meshing in Coreform Cubit with explicit sidesets and rollers
- Quantified localized von Mises stress peaking along fuel-graphite interfaces by comparing mapped spatial neutronics power profiles against uniform heat generation assumptions in ParaView

HTGR Graphite Monolith FEA | ***Independent Nuclear Project*** *September 2026*

- Evaluated thermal-mechanical limits (662 K peak temp, 1.52 MPa stress) of an IG-110 graphite monolith by engineering a coupled MOOSE Framework simulation with an 18,430-element HEX8 mesh
- Prevented artificial thermal stresses and eliminated 6 rigid-body modes by scripting a Coreform Cubit journal workflow implementing an isostatic 3-2-1 point-constraint boundary scheme
- Mapped hydrostatic stress bounds (+0.44 MPa / -0.50 MPa) in ParaView using custom state files to identify tensile core regions prone to micro-cracking under thermal loads

EXPERIENCE

Full-Time Volunteer Representative | ***The Church of Jesus Christ of LDS*** *August 2023 – August 2025*

- Achieved strict operational compliance by upholding rigorous schedule protocols in high-accountability 2-person teams
- Optimized regional KPIs across teams of 9–22 peers by leading targeted training and performance improvement cycles
- Facilitated cross-cultural outreach by delivering complex, structured concepts fluently in Spanish to local audiences

Cybersecurity Technical Support Intern | ***Venafi, a Palo Alto Company*** *June 2022 – August 2023*

- Accelerated SecOps issue resolution by reproducing VM certificate failures and authoring technical guides
- Streamlined enterprise PKI workflows by troubleshooting certificate lifecycles and resolving API integrations
- Led team in support ticket volume by resolving high-frequency enterprise SSL renewals and account requests

VOLUNTEER EXPERIENCE

Operations & Protocol Volunteer | ***Rexburg Idaho Temple*** *October 2025 – Present*

- Ensured 100% procedural adherence by applying high-precision operational protocols during weekly 4-hour shifts

Community Program Lead | ***The Church of Jesus Christ of LDS*** *September 2025 – April 2026*

- Expanded community engagement and outreach by directing a 3-person executive team and managing a $125 budget

Eagle Scout | ***Boy Scouts of America*** *Awarded December 2019*

- Managed a 111-hr project, directing 18 volunteers to run a talent show event for ~30 memory-care senior residents