Dmitriy Kats

Denver, CO

Structural Engineer · Mechanical Engineer · Stress/Fluid Analyst · Programmer
Developed numerical engineering solutions · Implemented coupled and multi-physics models
Achieved faster models with parallel computing and machine learning

Computational modeling: LS-DYNA, SAP2000, STAAD, Abaqus, COMSOL, TrueGrid
Programming: Python, Matlab, C++, Bash, CUDA, Built-in scripting
CAD: Solidworks, CREO, AutoCAD, Microstation

Work Experience

HDR, Inc. **June 2019-Present**
Finite Element Analyst (Structural Engineer) Denver, CO

- Create structural finite element models of dams for static and dynamics loads.
- Transform workflow through automation to avoid time-intensive tasks and data processing using Python programming.
- Address engineering needs by implementing engineering tools and algorithms from published papers and workshops in Python.
- Check colleague's engineering calculations for accuracy and resolve differences.
- Speed up computational models using parallel computing and efficient programming in Python.
- Consult subject-matter experts for more accurate models.
- Present technical findings to general audience and clients.

Northwestern University. **September 2016-June 2019**
Graduate Research Assistant Evanston, IL

- Improved material characterization of metal 3D printed material by 5000X using machine learning techniques in Python TensorFlow.
- Developed multi-physics C++ codes based using the finite element method and computational fluid dynamics.
- Showed engineers how to use machine learning for physics modeling by presenting at conferences and workshops with quantitative proof of effectiveness and validity.
- Taught programming and advanced mathematics to graduate students and high-school mentees in class and one-on-one using examples, handouts, and exercises.
- Showcased student's skills at the end of my mentoring program when they presented their aerospace turbine blade design to researchers and graduate students.

Education

Northwestern University. **June 2019**
M.S. Mechanical Engineering GPA: 3.94/4.00 Evanston, IL

Johns Hopkins University. **May 2016**
B.S. Mechanical Engineering GPA: 3.89/4.00 Baltimore, MD
B.S. Applied Mathematics

Interests: , , , triathlon, rock climbing, tutoring, and cooking