Vadim Kuklov

www.vadimkuklov.com

Seattle, WA
vkuklov1@gmail.com
732 406 1148

Massachusetts Institute of Technology
Boston, MA

MS, Mechanical Engineering, Building Technology Group
2017 - 2019

Columbia University
New York, NY

BS, Mechanical Engineering, Minor in Biomedical Engineering, EIT
2007 - 2011

Cooper Perkins
Lexington, MA

Mechanical Engineer
2020 - 2023

Collaborated with a team of mechanical and electrical engineers to solve sticky problems, develop technologies, and design products across several industries. Responsibilities included project management, concept ideation and refinement, detailed design, and design for manufacturing.

Led the mechanical and electrical design of a novel upper-arm assistive medical device for users suffering from neuro-degenerative conditions. The twisted string actuation method involved the integration of academic theory with empirical testing to iterate the design.

Led a small team to develop, prototype, test, and iterate novel collapsible methods to support flexible tools for robotic surgery. This required supporting high buckling loads over long spans, and involved the use of oil and gas industry research to understand and implement the fundamental physics of this medical device.

Designed the cabling and electronics packaging for a late-stage Beta prototype humanoid robot. This was developed in parallel with a team redesigning the structural components and under tight space constraints, significant power and signal needs, and complex usability requirements.

Other projects include the redesign of the resistance unit for commercial exercise equipment using a magnetic eddy current brake, design/build of various medical device test fixtures, and rapid ventilator regulatory compliance research.

Codified the Cooper Perkins product development process for internal alignment and new hire onboarding.

Led the internal sketching program to develop the visual communication skills of my peers.

MIT Tata Center for Technology and Design
Boston, MA

Tata Fellow, Building Technology Group
2017 - 2019

Designed thermal and structural performance improvements for low-income reconstruction housing in Nepal.

Collaborated with rural homeowners to ensure design recommendations met their needs given the context, constraints, and culture of vernacular construction.

Translated fiber reinforcement into structural mud mortar, improving seismic resistance of vernacular mud and stone construction by up to 18%. Conducted structural testing on masonry using mixes with local fibers using Instron compressive and bending tests.Piloted local materials as retrofit insulation to mitigate inside operative temperature extremes by 2-3° C. Gathered and analyzed data over 3-6 month time scales to confirm performance.

Initiated a partnership between the United Nations Development Programme in Nepal and the MIT Tata Center, with assistance from the Hunnarshala Foundation in Gujarat, India. Secured a direct path to implementation in up to 50,000 homes in Nepal, as well as future large-scale housing projects globally.

Sanergy

Nairobi, Kenya

Product Design Associate

2014 - 2017

Developed two new customer-facing products to improve sanitation in urban informal settlements. Led the design process, from initial research and ideation, through prototyping and testing, to manufacturing and implementation strategies. Collaborated across departments to accomplish each design phase, including user interviews, field pilots, and regulatory compliance.

Led a major logistics product design project to improve labor efficiency and safety. Designed and built multiple iterations of a waste collection and consolidation prototype that safely collected, stored, and transported up to a ton of waste. Worked with field teams to integrate and test each prototype, as well as with the operations research team to build cost models for a business case.

Developed a pit waste emptying service to capture the value of pit sludge and prevent its dumping. Collaborated with manual pit emptiers to design an optimal sludge collection center. Negotiated with local government and community leaders to allow the formalization of pit emptying.

Supported departments across the company with process improvement and re-design. Initiated a re-design of toilet fabrication yard, improving the safety of our pre-fabricated concrete panel manufacturing process.

United States Department of State

Washington, DC

Foreign Service Security Engineering Officer

2012 - 2014

Collaborated to design, test, and implement crucial physical and electronic security systems at embassies and other diplomatic facilities around the world. Worked with a team focused on analyzing and attenuating electromagnetic and acoustic emanations from classified spaces in order to deny possible intelligence-gathering paths.

Initiated and led a working group to update and expand a particular high-threat countermeasure by organizing equipment testing and research, as well as coordinating with other intelligence agencies and commercial vendors.

Patent

US20200312188A1 Braille writing device - H. Johnson, V. Kuklov, A. Slocum

Skills

Analysis	Machine design, heat transfer, brainstorming and insight synthesis, DFMEA, FEA, tolerance analysis, GD&T, experiment design, interview design, economic modeling
Hardware	CNC and manual machining, plastics molding, rapid prototyping, fiberglass, model making, sketching and storyboarding, welding
Software	Solid and surface modeling, SolidWorks, Rhino, Fusion, Adobe suite, MatLab, Arduino, MS Office
Languages	Fluent Russian and English, basic French, Java, C, Python
Interests	Alpine and big wall climbing, backcountry skiing, backpacking, woodworking, soccer

Volunteer

Washington Anchor Replacement Program: Climbing Bolt Replacement
Western Massachusetts Climbers Coalition: Route Renaming Protocol
MIT Makerworks: Mentor Coordinator
MIT Outing Club: Climbing Leader
Mountain Club of Kenya: Committee