VICTOR PROST

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Portfolio & Publications : vprost.scripts.mit.edu

EDUCATION

Massachusetts Institute of Technology (MIT), GPA: 5.0/5.0 Sept 2015 – June 2020
Master of Science (2017), Ph.D. candidate (2017-present), Mechanical Engineering
Projects: - Applied machine learning to structural design optimization ~50% time reduction
- Designed a precision desktop lathe ~5um surface roughness (see more details at vprost.scripts.mit.edu)
- Conceived and fabricated a 2m Swath-Hydrofoil water-craft
- Developed and prototyped a hybrid transmission for a Ferrari sport's car

Ecole Polytechnique (X), GPA: 3.96/4.00 Sept 2014 – June 2015
Master in Mechanical Engineering, Fluid Mechanics Major (ranked top 3%)
Projects: - Conceived and prototyped a self-healing ,hardness controlled bumper
- Optimized a drone's flight plan using air streams with Delair-Tech
- Designed an autonomous wheeled robot for large-scale printing

EXPERIENCE

Global Engineering and Research Laboratory, MIT *Research Assistant with Prof. Amos G. Winter* April 2016 – present
- Evaluated customer needs and analyzed passive prosthetic market in India and the US
- Modeled, designed, and optimized passive prosthetic feet to enable natural walking motion for 1/20th of current designs cost
- Partnered with Vibram to conduct an 8 month field trial in India of prosthetic feet designed for large-scale manufacturing
- Co-authored 3 journal papers, filed 2 international patents and received the Thomas Sheridan Prize for excellence in research

Fluid Dynamics Laboratory, MIT *Research Assistant with Prof. John Bush* April 2015 – July 2015
- Designed a $60 educational experimental setup to demonstrate the bouncing droplets hydrodynamic system
- Modeled and performed numerical simulation of a vibrating soap film, to characterize bubble pinching phenomenon
- Authored one journal publication, featured in a scientific channel and awarded Milton Van Dyke Award for research excellence

Valeo Automotive Transmission Systems Co. (China) *Production Site Assistant Manager* June 2014 – August 2014
- Analyzed the production of an engine clutch factory in China and performed industrial optimization increasing efficiency by 3%
- Planned and sketched the layout for the 2020 factory expansion project

SKILLS

Mechanical Design: Deterministic Machine Design, Linkage Design, Compliant Mechanism Design, Design for Manufacturing and Assembly, Structural and Finite Element Analysis, Manufacturing Process Selection, GD&T

Product Design: Design for resource-constrained settings, Human-centered design, Graphic design, Prototyping, Product Modeling

Other: Biomechanics, Dynamics and Control, Mechatronics, Multi-objective Optimization, Applied Machine Learning

Prototyping: Milling (3 Axis, CNC), Lathe (CNC), Shopbot, FDM 3D printing, Laser cutter, Waterjet.

Digital Tools : CAD (*SolidWorks, HSMWorks (CAM)*), Computation (*MATLAB, Python, C++, LabView*), Graphic Design (*Adobe Suite*)

PATENTS & AWARDS

Shape Optimization for Prosthetic Feet, *Provisional* Patent #62/856,394
Passive and Slope Adaptable Prosthetic Foot, *Patent #WO 2019/028388 A1*
USpring Design for Prosthetic Applications, *Patent #WO2018/208714 A1*
Dual-Shaft Clutchless Hybrid Transmission, *Patent #WOUS2017/031157A1*

Tata Center for Technology & Design Fellowship, 2016 – 2018
Runner Up Prize, Department Research Exhibition, 2017
DeFlorez Award in Graduate Design, 2016 (2nd)
Jean Gaillard Memorial Fellowship 2015

TEACHING & LEADERSHIP

MIT MakerWorkshop, Mentor Sept 2016 – present
- Volunteered 4hr/week in a student operated machine shop providing supervision to more than 300 students.
- Maintained and serviced the waterjet while offering weekly training on its safe operation

MIT Communication Lab, Communication Coach June 2018 – present
- Developed workshops and online material to teach effective communication skills
- Coached students on a weekly basis to improve their scientific writing and presentations

MIT Courses - Mechanics & Material / Design & Manufacturing, Teaching Assistant 2016&2019
- Taught recitations and lectures as well as created teaching material for more than 110 undergraduates,
- Ran and designed hands-on in lab educational experiments

MIT Course 2.76 – Global Engineering, Mentor Jan 2016 – May 2016
- Mentored a team of six graduate students in an introductory course on machine design processes
- Guided students through different stages of user-centric design, mechanical analysis and manufacturing
- Filed a patent and journal publication with the team on a slope adaptable prosthetic foot ankle

INTERESTS

Languages: Fluent in English, French and Chinese (Mandarin), basics in Spanish, Japanese and Hindi
Volunteering: Project leader in the MIT Marine Robotic Team (MRT)
Promoted cultural diversity as co-president of the MIT French Club
Interests: Windsurfing, Sailing, Squash, and Skydiving, University Boxing (French League Champion, 2014 & 2015)