

# Nick Brennan

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## PROFESSIONAL EXPERIENCE

**Mechanical Engineer & Business Developer** | [NK Labs](#) | Cambridge, MA | June 2017 – Present

### **Mechanical Engineering**

- Led design, build, and testing of smart camera vision system for agricultural environment and passed IP65 test
- Designed mechanical interface for custom, modular, extremely-close-range time-of-flight camera for iterative, repeatable position and orientation of LEDs in minimal volume; assisted in debug, testing, and data collection
- Created automated 3-axis dark box test rig to assess light-sensitive electronics; wrote MATLAB control software
- Redesigned inherited high-vacuum chamber for muon-catalyzed fusion physics experiment with focus on ease-of-assembly, particle permeability, vacuum compliance, wire routing, and existing geometric constraints
- Worked on-site at Paul Scherrer Institute particle accelerator, various client labs, demos, and test locations
- Ideated and designed mobility robot sub-system to vertically lift payloads up to 2.5X base height
- Designed, prototyped, and tested robot sub-system to automatically attach to and lift itself onto standard car hitch
- Worked with an industrial design mindset, utilizing silicone foams and fabric for ergonomic, comfortable features
- Developed and constructed 60 hp torque test fixture to evaluate prototype aerospace motor

### **Business Development**

- Managed project leads; primary point of contact for potential clients; drafted project proposals and grant applications
- Led interviews for co-op and full-time hirings: organized job postings, filtered resumes, conducted phone screens, etc.
- Overhauled and maintained company website, improved SEO, created ads, and increased monthly traffic by >3X
- Hosted company booths at US Dept. of Energy ARPA-E Summit and BIOMEDEVICE Expo

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**Advanced Systems Mechanical Engineering Co-op** | [Boston Engineering](#) | Waltham, MA | Jan – June 2016

- Designed complex parts and assemblies for robotic systems in PTC Creo and maintained in Windchill PDM
- Executed effective design strategies for static and dynamic sealing of marine components
- Iterated designs of marine technology for preferred CG and CB both experimentally and analytically
- Learned and applied basics of circuitry to assemble functional electrical prototype systems

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**Mechanical Engineering Co-op** | [Farm Product Development](#) | Hollis, NH | Jan – June 2015

- Engaged in multiple mechanical design projects for diverse clients across the biomedical industry
- Created models and drawings in SolidWorks from conceptual brainstorming through full-scale prototypes
- Obtained skills for surface modeling within SolidWorks and earned Advanced Surfacing certification
- Modified model of fixture to design for machinability, simplified features by 60%, and reduced cost
- Performed FEA using ANSYS Workbench and SolidWorks Simulation to determine appropriate part geometry

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**Research & Development Co-op** | [LeMaitre Vascular](#) | Burlington, MA | Jan – June 2014

- Utilized SolidWorks to design, model, and produce drawings of parts and fixtures for R&D and Production use
- Conducted device and component testing on samples across many of company's product lines
- Made regular use of laboratory equipment such as the Instron, Vision System, and burst pressure system

## TECHNICAL SKILLS

*Applications:* SolidWorks CSWP | PTC Creo | Onshape | ANSYS | Asana | Trello | Google Ads/Analytics

*Fabrication:* Mill | Lathe | 3D Printers (SLA, FDM) | OMAX Water Jet | Laser Cutter | DFM | Woodworking | Soldering

*Computer Languages:* MATLAB | Git | Linux | Basic HTML | CSS | Basic Python

## EDUCATION

**B.S. in Mechanical Engineering**, Minor in Biomechanical Eng. | Northeastern University | Boston, MA | May 2017

*Honors:* Magna Cum Laude, University Honors Program, Dean's List, National Hispanic Recognition Program Scholar

*Activities:* FIRST Robotics Team 125 "NUTRONS", Civic Engagement Program, Biomedical Optics Taipei DoC

*Senior Capstone Design Project:* Automated Control System to Map Material Properties of Cartilage - Team Lead

## BACKGROUND & INTERESTS

Music • Travel • Bike Commuting • Hiking • Snowboarding • Pizza

