

Pol Bernat Belenguer

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EDUCATION

Columbia University, New York [Anticipated Graduation: May 2022]

School of Engineering and Applied Science, Mechanical Engineering, CGPA – [3.92/4.00]

Courses: *Dynamics & Vibrations* | *Intro to Robotics* | *Data Structures in Java* | *Machine Design* | *Control Systems*

Stanford University, Palo Alto [June 2017 – August 2017]

Summer Semester of Classes. CGPA – [4.0/4.0]

Courses: *MATLAB* | *Sustainability Design Thinking* | *Persuasive Communication*

St Paul's School, Barcelona [September 2016 – May 2017]

Spanish Baccalaureate: 9.39/10 | ACT: 34/36 | Class President | Futsal Team Captain

Proficient in CAD (SW, Fusion360), DFM/DFA and Python | Experience in Linux, ROS, MatLab, Java & HTML/CSS

PROFESSIONAL EXPERIENCE

Creative Machines Lab (Digital Cooking), Robotics Researcher New York, NY [May 2021 – Aug. 2021]

- Led the design and manufacture of a novel complex mechanical system that was integrated to a state-of-the-art food 3D printer.
- Designed and built ~100 prototypes – continuously testing, performing root-cause analysis and improving aspects of the design.
- Managed a team of 2 engineers, assumed responsibility of the budget, bill of materials & communications with our PhD advisor.

Creative Machines Lab (Locomotion), Robotics Researcher New York, NY & Online [Jan. 2020 – Present]

- Designed and built the *Pink Panther* robot, a quadruped able to reliably walk with a top speed of ~0.33m/s.
- Simulated the robot using a physics simulator (PyBullet) and trained it to walk via applying ML algorithms in Python (Genetic Algorithm; Hill Climber & Random Search) and hardcoding values to get useful kinematic equations that control each joint.
- Set up a network environment to apply a learning policy on the physical robot to optimize its gait using a cross-entropy method.

WEAR WORKS (Haptics Design), Hardware & Product Design Intern New York, NY [Jan. 2019 – May 2019]

- Collaborated in a team to create a multi haptic motor system that enables testing and production of haptic experiences.
- Led the development of the circuit design and co-wrote & implemented software for the motor output using Arduino (C++).
- Fabricated two iterations of rapid prototypes for the physical interface of the haptic pods with skin using CAD and 3D Printing.

ANTAI (Venture Builder), Business Development Intern Barcelona, Spain [April 2018 – June 2018]

- Analyzed the value proposition & business model of startups in the Insurtech, Fintech, Proptech and Peer2Peer sectors.
- Performed preliminary Spanish market analyses for business opportunities in lifestyle sectors such as Fragrances and Furniture.
- Pitched weekly to partners my research on the viability of existing business models to be launched in Euro/LATAM markets.

Atheer (Augmented Reality), Product Management Intern Mountain View, CA [January 2018 – March 2018]

- Devised the first product features document that maps the user journey and structures product-tracking that's still in use today.
- Mapped the onboarding process and delivered a methodical study of pain-point optimization proposals to the UI/UX team.
- Reported directly to the Head of Product for analysis in the short-term and long-term product roadmap progressions.

EXTRACURRICULAR PROJECTS

NASA SPOCS Competition Winners, Design & Manufacturing Engineer [August 2020 - Present]

- Selected as one of 5 U.S. university teams to launch and deploy a payload experiment to the International Space Station.
- Conceptualized and devised the CAD model of the payload to carry out an experiment growing bacteria onboard the ISS safely.
- Co-leading the manufacturing and testing of the payload structures with a \$20,000 NASA subcontract. Expected launch: 2022.

Aspiras Foundation, Co-President at Columbia University [February 2019 - Present]

- Co-leading a team of 7 in developing the foundation's goal – to instill values in youth of the Dominican Republic through soccer.
- Managing the strategy and team to develop a program that connects athletes in U.S. universities with the youth in the D.R.

Snowboard, Personal Project

- Built a snowboard at the state-of-the-art level as my high school's sophomore year design & technology final project – & rode it.

HOBBIES: Futsal, snowboarding, scuba diving, sketching & making furniture and robots