Eamon Bracht

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Education

- **University of Illinois** — Champaign, IL
  Bachelors of Engineering; Bioengineering: Computational and Systems Biology — *May 2020*
  - **Minor**: Computer Science
  - **Relevant Coursework**: CS125(Java), Discrete Structures(CS173), Data Structures(CS225), Applied Statistical Methods(ABE440), Signals and Systems(BIOE205), Quantitative Modeling(BIOE302), Computational Tools for Bio Data(BIOE310), Database Systems(CS411), Deep Learning(CS398), Artificial Intellegence(CS440)

Research & Work Experience

- **Jump Trading, Simulations** — Peoria, IL
  Bioengineering Intern — *May 2018 - August 2018*
  - Developed an IOS/Android app that uses augmented reality to teach physics and biology to pediatric patients during long-term hospital stays
  - Used Firebase for backend and developed front-end to track progress asynchronously using Unity in C#
  - Worked as a project manager, facilitating the development of an internal web dashboard for hospital analytics and a custom rehabilitation device
- **Underhill Cell and Tissue Lab** — Champaign, IL
  Undergraduate Researcher — *Janurary 2017 - Present*
  - **Hematopoietic Stem Cell(HSC) Morphology Analysis**: Researched 2D cellular arrays and 3D biomaterial systems to explore the effect of the ECM on stem cell differentiation and liver fibrosis using microarraying on hydrogels
  - Wrote CV scripts in matlab to analyze high-throughput gel array images and built extensive pipelines in R to clean, analyze and visualize data from millions of cells in multimillion line datasets
- **Duke Univeristy Brain Tools Lab** — Durham, NC
  Research Intern — *May 2017 - August 2017*
  - Designed tumor CNC to robotize brain tumor resection using lasers.
  - Offboarded laser hardware for operating-room readiness, decreased device size, and added safety features
  - Developed laser scanning algorithms to map brains surface and used genetic algorithms to optimize 3D path integrals to remove brain tumors

Projects

- **Citadel Securities** — New York City, NY
  Participant — *July 2018*
  - Recruited to participate in DataOpen by Citadel, a data hack-a-thon focusing on using quantitative tools to identify unique trends in large data sets
  - Developed and validated model to predict airline delays in python
- **Vector Robotics** — Greater Chicagoland Area
  Mechanical Engineer — *September 2014 - June 2017*
  - Founded underwater robotics team building remotely operated underwater vehicle(ROV's) for competition in MATE underwater robotics. Invited by NASA for testing at the Neutral Buoyancy Lab
  - Designed and fabricated reliable waterproofing solutions for complex rotary and linear mechanical components at depths of 200ft

Technical Skill

- **Languages**: C++, Python, C#, Java, JavaScript(React), R, HTML, CSS, LaTeX, MatLab
- **Frameworks**: Pytorch, Express.js, Node.js
- **Tools/Libraries**: MongoDB, Firebase, Unity, Axios, EPIC (EHR), SolidWorks, Creo