Katherine Huang

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Education

University of Massachusetts Lowell (2017–)
- Non-degree courses: Discrete Structures I, Honors Chemistry I-II, Chemistry I-II Lab

Lowell High School (2015–2019)
- Member of Latin Lyceum, an honors program
- Class rank: 2/750; unweighted GPA: 3.9/4.0
- Advanced Placement courses: Statistics (self-study), Computer Science (self-study), Calculus BC, Physics 1, US History, European History, Latin

Experience

Harvard University | Research Intern (Jun–Aug 2017)
- Performed and analyzed computational simulations of quantum dots and wells
- Improved protocol for selective etching of nanoscale semiconductor laser cavities
- Gained familiarity with cleanroom nanofabrication facility and scanning electron microscopy

MAHacks | Organizer (Sep 2017–)
- Maintain website and registration platform, contact potential sponsors and students, and help run logistics for high school hackathon in Boston

UMass Lowell | Research Intern (Nov 2016–Apr 2017)
- Ran docking and molecular dynamics simulations of potential drugs for botulism
- Third Place at **Massachusetts State Science and Engineering Fair** 2017

Middlesex Community College | Research Intern (Jan–Mar 2016)
- Investigated effect of burned PVC on *E. coli* transformation and antibacterial resistance
- Published in ***Journal of Emerging Investigators***

Select Projects

- **Discovering Protein Coding Genes Through Hydropathy Disparity** | Design and implement algorithms to calculate hydropathy of amino acid sequences; statistically analyze distributions to establish method for protein-coding gene prediction
- **Social Media Storm: Lessons from Hurricane Harvey** | Classify Harvey tweets with unsupervised machine learning; identify ways to improve social media use in emergency management

Skills and Languages

- **Software Development:** Python, Javascript, HTML, CSS, bash, git
- **Data Science & Communication:** R, LaTeX, technical/copy/general writing
- **Computational Biology & Biotechnology:** Molecular docking and dynamics, PyMOL, VMD; bacterial transformation, growth media preparation, plasmid isolation and purification, DNA quantitation, site-directed mutagenesis, gel electrophoresis, PCR
- Languages: English (native), Chinese (intermediate), Latin

Activities and Awards

- Hackathon Participant: MIT Blueprint, CodeDay Boston, MetroHacks, MAHacks
- President of Model United Nations Club and Chess Club
- National Latin Exam: Perfect Paper (2016), Gold Medal (2015–2017)