Vahid Fazel-Rezai

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Education

Massachusetts Institute of Technology — June 2018 (expected), *Cambridge, MA*
- Major: Electrical Engineering and Computer Science (Course 6-2)
- Courses: Electricity and Magnetism, Intro EECS, Differential Equations

Phillips Exeter Academy — June 2014, *Exeter, NH*
- Graduated with High Honors
- Courses: Linear Algebra, Electronics, Cryptography, Game Theory, Intro Real Analysis

Research

Space Systems Lab — 9/14–present, *Mass. Institute of Tech.*
- Working on satellites as part of Undergraduate Research Opportunities Program
- Developing software that integrates images from three types of cameras into single 3D point cloud
- Analyzing data from SPHERES reduced gravity flight test

Genetics Research — 3/14–6/14, *Phillips Exeter Academy*
- Crossed *Drosophila* to create stable lines with gene inserted for fluorescence
- Dissected and imaged flies to identify gene expression collaborating with Seung Kim Lab at Stanford Univ.

Independent Math Research — 2/13–9/13, *Mass. Institute of Tech.*
- MIT Program for Research In Mathematics, Engineering and Science
- Identified useful methods and classified families of permutations according to novel set of relations
- Presented at 2014 Mathematical Association of America Undergraduate Student Poster Session

Computational Biochemistry Lab — 10/11–3/12, *Univ. of North Dakota*
- Worked in Linux and C for 65 hours alongside graduate students
- Simulated peptide structure in varying conditions and compared results with experimental data

Independent Math Research — 1/11–5/11, *Grand Forks, ND*
- Examined sets of intersections points of polygon diagonals using MATLAB
- Identified geometric patterns of interest and generalized to continuous sets of points
- Presented at Intel International Science and Engineering Fair 2011

Publications

Vahid Fazel-Rezai. Equivalence Classes of Permutations Modulo Replacements Between 123 and Two-Integer Patterns. *Electronic Journal of Combinatorics*, 21(2):#P47, 2014.

Work

Product Innovation Specialist — 12/14–present, *Recharge Labs*
- Researching products with potential for small-scale solar electricity in Nepal

Grader — 9/14–present, *Art of Problem Solving*
- Grading and giving feedback for online programming and math problems

Problem Director — 8/13–1/14, *Exeter Math Club Competition*
- Oversaw writing of 67 problems and solutions and grading for 180 students

Activities

Harvard-MIT Math Tournament, staff/photographer — 2014–2015

MIT Men's Ultimate Frisbee Team — 2014

Phillips Exeter Academy Science Bowl Team, co-founder and captain — 2013–2014

Awards

Bronze Medal, Asian Pacific Math Olympiad — 2014

Semifinalist, Intel Science Talent Search — 2014

Honorable Mention, Canadian Math Olympiad (7th place) — 2014

Siemens Award for Advanced Placement — 2012

Fourth Award in Mathematics, Intel International Science and Engineering Fair — 2011

Winner, USA Junior Math Olympiad (6th place) — 2011

Skills

Python, C, C++, Java, MATLAB, OpenCV, LaTeX, Linux, HTML, CSS, Javascript, BASIC, Lego NXT