

# Richard Du

609.647.6187 • rdu@princeton.edu • www.richardu.com (NOT www.richarddu.com) •  richdu

Interested in machine learning, entrepreneurship, and web development.

Education	<b>Princeton University • 2015 – 2019</b> B.A. Computer Science, certificates in Statistics and Machine Learning, Applied and Computational Mathematics	GPA: 3.7
	<b>Coursework</b> Junior Independent Work with Professor Gunawardena, Machine Learning and AI, Computer Vision, Intro to Programming Systems, Data Structures and Algorithms, Probability Theory, Accelerated Honors Analysis I and II	<b>Programming Languages</b> Languages <u>Java</u> , <u>Python</u> , Ruby, C#, HTML/CSS, MATLAB, R, SQL, C Frameworks Rails, Android Studio, OpenCV, ASP.NET, AngularJS
Awards	<b>International Mathematical Olympiad (IMO) Team Canada</b> <ul style="list-style-type: none"><li>The International Mathematical Olympiad is the world's most prestigious math competition for high school students</li><li><u>Top 8 math students</u> in Canada are selected for the IMO Team</li><li>Official team member (alternate)</li></ul>	Jun. 2014
	<b>Canadian Mathematical Olympiad Winner</b> <ul style="list-style-type: none"><li>The Canadian Mathematical Olympiad is Canada's premier mathematics competition</li><li><u>1<sup>st</sup> in Canada</u>, 5<sup>th</sup> including international students</li></ul>	Apr. 2013
	<b>United States of America Mathematical Olympiad</b> <ul style="list-style-type: none"><li>2-time qualifier</li><li><u>33<sup>rd</sup> and 54<sup>th</sup> place in North America</u></li><li><u>~ 250 out of over 350,000</u> participating students qualify</li></ul>	Apr. 2014, 2015
Experience	<b>Classroom Salon, Full Stack Web Developer</b> Classroom Salon is an online education platform built by Princeton and CMU and used by 20,000 students. I am working on a website overhaul. My work is being adopted in several schools in the US, and will be used in Princeton CS Courses (Spring 2017). <ul style="list-style-type: none"><li>Implemented video annotations, transcript navigation and highlighting, etc.</li><li>Currently working on automated transcript and video clip generation</li><li>Implementing Central Authentication Service (CAS), single sign-on protocol that allows for easy deployment</li><li>Originally wrote code in ASP.NET, JSRender, currently writing Rails layer to provide abstraction from current backend</li><li>Built with Rails, AngularJS</li></ul>	Jun. 2016 – Present
Independent Projects	<b>Line Matching Using Computer Vision</b> I implemented Andrew Zisserman's computer vision paper, <i>Automatic Line Matching across Views</i> . It matches detected line segments between two photographs of the same scene. It is robust to both translation and rotation of camera. <ul style="list-style-type: none"><li>Fundamental matrix computed from camera projection matrices</li><li>Epipolar constraint used to find matching line segments</li><li>Works with 2 viewpoints, currently working on 3 viewpoints using the trifocal tensor</li></ul>	Python, OpenCV
	<b>Neural Algorithm of Artistic Style (In progress)</b> I implemented the research paper, <i>A Neural Algorithm of Artistic Style</i> , by Leon A. Gatys et al. This paper discusses an algorithm that can combine the 'content' of one image with the 'style' of another image. For example, it can combine an image of my face with <i>The Scream</i> . <ul style="list-style-type: none"><li>'Style' of the image captured with a deep neural net, specifically a convolutional neural net</li></ul>	Python
	<b>StudBuds.com, Co-founder</b> StudBuds is a peer tutoring platform. Today, there are 160+ registered students. I built the initial website, and have since moved on to other projects. <ul style="list-style-type: none"><li>Designed highly-scalable tutor and student database using Rails</li><li>Implemented initial messaging system from scratch using AJAX polling</li><li>Created notification system by integrating Mailboxer, a Rails gem</li></ul>	Rails
	<b>ChatStats</b> ChatStats is an Android application giving users statistics about their text message conversations, such as average response time, average message length, etc.	Java (Android Studio)
Me	<b>Interests</b> Squash, Poker, B-Boying	