**Brian Shao-en Ma**

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**COLGATE UNIVERSITY**, Hamilton, NY, USA May 2021

* **Bachelor of Arts –** (**3-2 Pre-Engineering Track**) Major: **Physics**; Minor: **Mathematics, Jewish Studies** (Overall GPA: **3.51**) **Dean’s List**
* **Planned Major at Engineering Institution (Columbia University): Computer Science** (Bachelor of Science)
* **Relevant Courses: COSC 102** Intro to Comp Sci II (Data Structures in JAVA), **MATH 260** Computational Mathematics, **PHYS 201** Math Methods for Physics (MATLAB), **MATH 250** Number Theory and Math Reasoning, **MATH 377** Real Analysis, **PHYS 334** Intro Quantum Mech/Spc Relativ, **PHYS 336** Electronics

# TECHNOLOGY EXPERIENCE

**HULU**, *Intern*, Beijing, China Summer 2018

* Participated in an agile team and supported efforts to upgrade and maintain the front-end systems of Hulu.com.
* Gained better understanding of industry concepts relating to web development and web architecture, as well as with Agile development methods such as Scrum.
* Migrated around a thousand test cases to a different testing framework and introduced snapshot testing to certain tests. Also wrote original test cases for a microservice written in Go and increased code coverage to 100% for multiple files.
* Participated in Hulu Beijing Office Hackathon in a team of 3 and won “Coolest Hackathon Project” with RMB 2,000 prize out of 22 competing teams. Project was completed in 2 days and consisted of a “Katamari” ball able to pick up elements of any website and graphically display them as if they were picked up by a 3-dimensional ball. Wrote particle system and various physics effects based on knowledge from Physics courses.

**COLGATE UNIVERSITY**, **HCI LAB**, *Faculty Research Assistant*, Hamilton, NY, USA Spring 2018

* Participated in the development of a videoconferencing web service that allows for synced video-watching using HTML, CSS, JavaScript, WebRTC, Socket.io, and Apache web server, and provided technical assistance other members of the team.

**TSINGHUA UNIVERSITY**, **X-STUDIO**, *Research Intern*, Beijing, China Fall 2016 – Summer 2017, Winter 2017

* Completed, debugged, and finished major component of an interactive storybook written in Unity that connects to a custom capacitive device able to provide haptic/textural feedback within a 3 day deadline. Learnt to use Microsoft Foundation Classes, Unity inter-process communication, and C++ inter-process communication. Successful completion within deadline and demonstration in front of exhibition visitors.
* Collaborated with Masters student to build interactive device that tracks input on a surface using temperature changes and a game based on the device. Implemented particle system, parts of input detection and game logic, and Arduino code for haptic tools. Used C++ OpenFrameworks library, XBee wireless communication, and OpenCV library.
* Participated in numerous other projects. Edited 10+ papers in support of publication efforts and participated in design of user studies.

**CYDESIGN LTD**, *Programmer*, Beijing, China Summer 2017

* Brought in by recommendation to debug and implement Kinect gesture control on a motion controlled robotic arm controlled via the internet. Used C# with Unity3D and Microsoft Kinect SDK.
* Exhibited result to the public at “Global Artificial Intelligence Summit Forum & Launching Ceremony of China (Hangzhou) Artificial Intelligence Town” as an official business exhibitor.

**Raspberry Pi Club**, Dulwich College Beijing, *President*, Beijing, China Fall 2013 – Spring 2014

* Founded club and organised lessons using Raspberry Pi computers to teach Python programming, circuits, and electronics.

# PUBLICATIONS

Lu, Q., **Ma, S.,** Xu, Y., Li, J. (2019). IRelics: Designing a Tangible Interaction Platform for the Popularization of Field Archaeology. In Proceedings of TEI '19: ACM International Conference on Tangible, Embedded and Embodied Interaction. Tempe, AZ.

# OPEN-SOURCE CONTRIBUTIONS

**eslint-import-resolver-babel-module (Javascript)** Summer 2018

# SKILLS

**Programming Languages:** C#, C++, Java, JavaScript, Python, R, MATLAB, Processing, Go, Mathematica Languages with Advanced Proficiency **Technology:** Adobe Photoshop, Illustrator, InDesign, After Effects, Premier Pro, Microsoft Excel, NewTek Tricaster, HTML/CSS, jQuery, SQL, Wordpress, Google Sites, Unity, Unreal Engine, Kinect SDK, Hololens SDK, Optris Pi SDK, Zigbee, MFC, OpenFrameworks, OpenCV, PhoneGap, Circuit Design, 3D Printing, Lego Robotics, Teensy, Arduino, Scikit Learn, Git, WebRTC, AngularJS, Socket.io, Apache, Visual Studio, React.js, Next.js, Redux, Express Server, Mocha, Jest, Chai, Node.js, eslint, prettier, NPM, LaTeX, Jira, Docker

**Languages:** English (Fluent), Mandarin (Fluent), Hebrew (Basic)

# OTHER EXPERIENCE

**Student Government Committee on Information Technology**, Colgate University, *IT Representative* Fall 2017 – Spring 2018 **Department of Anthropology**, Colgate University, *Assistant Archaeological Illustrator* Fall 2017 **Marketing Club**, Colgate University, *Director of Graphic Design* Fall 2017 – Spring 2018 **Student Council Marketing Department**, Dulwich College Beijing, *Director* Spring 2014 – Fall 2015 ***“The Data Scientist’s Toolbox”***, Online Course, *With Distinction – Coursera*, Johns Hopkins University Fall 2014