Samana Shrestha

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EDUCATION

Vassar College, BA (Computer Science and Mathematics) | GPA: 3.70 **09/2014 – 05/2018**
Aquincum Institute of Technology at BME, Budapest, Hungary **01/2017 – 05/2017**

Selected Coursework: Algorithms, Language Theory & Computation, Computer Games, Declarative Programming, Compiler Design, Operating Systems, Modern Algebra, and Probability Models

Honors: Selected as a Shirley Oakes Butler Scholar (awarded to one international student per class year based on merit); Awarded the Ellen Rudnick Entrepreneurship Fund

Publication: J. Hullman, M. Kay, Y. S. Kim and S. Shrestha, *"Imagining Replications: Graphical Prediction & Discrete Visualizations Improve Recall and Estimation of Effect Uncertainty"*, in IEEE Transactions on Visualization and Computer Graphics, vol. 24, no. 1, pp. 446-456, Jan. 2018. DOI: 10.1109/TVCG.2017.2743898

TECHNICAL SKILLS

Competencies: Web development, Data visualization, Agile methodology, UX Design, and prototyping.
Languages: Python, Java, HTML, CSS, JavaScript (D3, React), C++, SQL, Scheme, Haskell, C, and R
Applications/Development tools: GitHub, Docker, Unity, Xcode, Sublime, Illustrator, Photoshop, Sketch, and InDesign

EXPERIENCE

Associate Developer **09/2018 – 03/2019**
NU Lab at McCormick School of Engineering, Northwestern University, Evanston
(Building on past work (UW, Seattle) of visualizing uncertainty with Prof. J. Hullman)
- Developing a visualization toolkit in React and d3.js that enables journalists to better understand and convey uncertain data

Robotics Instructor **06/2017 – 08/2017**
Brooklyn Robot Foundry, New York
- Instructed participants (ages 4 - 10) in a summer program on fundamental concepts of electricity and magnetism
- Guided participants in using electrical circuits and gearboxes to build simple robots

Undergraduate Research Assistant **06/2016 – 08/2016**
Data Lab at the Information School, University of Washington, Seattle
Delivered an experimental user interface to analyze the effect of using a graphical prediction technique for communicating uncertainty in experiment results
- Developed six visual interaction tools using JavaScript (d3.js), HTML, and CSS; recorded user interaction with each tool. Example tools included interactive demonstrations of gravitational physics and interface for drawing graphs
- Implemented Python scripts to clean and analyze study data from Amazon Turk
- Co-authored a paper summarizing the project and the study results (*Imagining Replications*)

Co-founder/ Workshop Instructor **05/2015 – 10/2016**
MakerKT, Kathmandu, Nepal
- Actively involved in designing workshops for K-12 education start-up (Karkhana, 2013 - 2014); co-founded a sister organization facilitating hands-on, maker workshop series for women
- Led sessions on electronic circuits, graphics design, and woodwork for the participants
- Supervised participants' final projects built using a skill they learned during the workshop series

RELEVANT PROJECTS **12/2015 – 05/2018**

Python - Implemented a compiler for a Pascal-like language, comprising of a lexical analyzer, parser, symbol table, semantic analyzer and code generator | *Individual semester-long project, Spring 2018*
Unity - Designed 3 single-player games throughout the semester, including a platformer and a 3D point-and-click adventure | *Pair project, Spring 2018*
C++ - Applied 3D physics (velocity, acceleration, rotation) and shadows in a car game; implemented 3D meshes, customized fragment shaders**,** transformation matrices and noise functions | *Individual class project, Spring 2017*
Java - Designed a banking system GUI application | *Individual class project, Fall 2016*
- Developed a version of the 'breakout' game | *Individual class project, Fall 2015*
Prolog - Applied pattern recognition to implement a program that recognized and returned sentences with correct English grammar, using rules of grammar as the knowledge base | *Pair project, Spring 2016*

ACTIVITIES

- ***Teaching Assistant***, Department of Computer Science, Vassar College **08/2016 – 05/2018**
- ***Design Intern***, Miscellany News, Vassar College **10/2014 – 05/2018**