# Logos/cis-logo-exports-final-8-2015-3/Web/2_Department_Lockups/InformationScience/cis-infosci-2-color.pngMaster of Professional Studies in Information Science

# Sponsored Project Proposal Form – Spring 2018

Please complete the following project proposal form to sponsor an MPS Project. This form will be used to determine if your project is appropriate for MPS students and whether it is of sufficient scope for a semester long project (~400-500 person-hours). We will assign teams with complementary skills based on the skills and experience you list in this form. We will also share most of this form with the students to help them make their top project choices before we assign the projects.

Please direct any questions to the MPS Project Coordinator: [is-mps-projects@cornell.edu](mailto:is-mps-projects@cornell.edu)

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| Sponsor Name | | Microsoft Research | | | | | | Date | 12/1/2017 |
| Contact Name(s) | | Tom Ball, Peli de Halleux | | | Email(s) | {tball,jhalleux}@microsoft.com | | Phone | 425-703-8591 |
| Description of the Sponsor | | | | | | | | | |
| Founded in 1975, Microsoft (Nasdaq “MSFT”) is the worldwide leader in software, services, devices and solutions that help people and businesses realize their full potential. Read more at <https://news.microsoft.com/facts-about-microsoft/> | | | | | | | | | |
| Please indicate which academic year and semester you would like to propose your project. | | | | | | | | | |
| Year | 2018 | | Semester | Fall | | Spring |  | | |
| Project Title | | | | | | | | | |
| Customized Coding Experiences for Your Customers | | | | | | | | | |
| Project Goal or Description | | | | | | | | | |
| Today there are many JavaScript libraries for accomplishing just about anything you want on the web, but it’s not easy for non-developers (your customers) to harness the power of these libraries. For example, augmented reality is all the rage, but not easy to get started with. In this project, you’ll create a programming environment for a domain of your choice, using the Microsoft MakeCode platform ([www.makecode.com](http://www.makecode.com)). Example domains include:   * **Traffic simulator**: using a traffic simulation engine, let the user program the strategy to switch the lights * **Face interaction**: using a face recognition engine, let the user build small apps that morph the user face based on the environment * **Survey**: build a survey that is dynamic in nature, requiring conditional control-flow; * **Business workflow**: encode business rules as a program; * **Music sequencer**: program a drum machine.   The web site <https://makecode.com/labs> showcases various domain specific editors built using MakeCode.  There are three types of student profiles required for the project (each student may wear multiple hats):   * **The specialist** provides knowledge about the domain that the editor is addressing. The specialist does not need to have any programming background; the specialist represents the customer of the editor. * **The designer** interviews the specialist, models the editing experience, designs the programming interface and conducts user research and interviews to validate the design. The designer does need to have any programming background. * **The developer** implements the design in code using the MakeCode framework. A programming background helps but it’s a great opportunity to get starting with coding as well. | | | | | | | | | |
| What activities are necessary to achieve the project goal? | | | | | | | | | |
| Investigation   1. Pick a domain of interest 2. Define the problem space and design the goal of the editor (what kind of problems users will be able to address) 3. Find a JavaScript **library** or **web service** that aligns with your domain/interests (1 week);   Design   1. Describe a simplified Application Programming Interface (**API**) for this library/service using TypeScript ([www.typescriptlang.org](http://www.typescriptlang.org)); 2. Configure a new MakeCode **editor** to surface your API as visual blocks (<https://makecode.com/target-creation>); 3. Implement various projects using pseudo-code to validate API design   Implementation   1. Integrate 3rd party library 2. Write an **interpreter** that brings your API to life in the web browser; 3. Deploy your MakeCode **web app** and test with your customers. | | | | | | | | | |

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| What outcome would determine that the project is a success? Do you expect specific deliverables? |
| A working MakeCode web app with a set of domain-specific APIs and a simulator that allows end-users to code and execute small programs. A public Github repo must be used for the project, with regular check-ins. |
| What are the skills and experience must the students already know to start work on the project?  Please be specific and keep in mind that students will be building their skills during the duration of the project. |
| HTML, CSS, JavaScript. You will learn these technologies during the project. |
| What are the skills and experience required to complete the project that the students may learn while completing the project? |
| TypeScript, Node.js. |
| The project representative must be available 30 minutes per week for status reports, the interim report, and the final presentation. As the project sponsor, are you able to make this time commitment?  Yes. Please elaborate. |
| We (Tom and Peli) can be available weekly via Skype for 30-60 minutes. Tom will come to Cornell for the final presentation. |
| Some sponsors may choose to spend additional time with the student teams, e.g. phone contacts for monthly status discussions, reviewing research results, providing midpoint project feedback, and offering input to the final deliverables in advance of its completion. As the project sponsor, are you available to participate in these or any additional activities?  Yes. Please elaborate. |
| We would like the project members to work on a public github repo that we will monitor and respond to. We also have a Slack for MakeCode Labs that can be used for live conversations with students. |
| The project representative needs to facilitate access to company resources as needed and approve expenses. As the project sponsor, are you able to facilitate access to such resources, should the need come up?  Yes. Please elaborate. |
| No need for any special resources. Standard laptop with access to internet is all that is needed. |
| Please consider other contributions listed below. Are you willing to make these contributions? (check all that apply)  Provide existing industry and company data as background at the beginning of the project.  Pay one or more team members to travel to your location for initial briefing / work session / final presentation.  Please elaborate. |
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| Please send your completed project proposal to the MPS Project Coordinator: [is-mps-projects@cornell.edu](mailto:is-mps-projects@cornell.edu) |