



# Tom Farro

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## PROJECTS

### HOSPITAL LOBBY ASSISTANT ROBOT | PROGRAMMER / UI DEVELOPER

Ongoing

- Provides streamlined patient registration through on-board touchscreen UI, then assigns a room, alerts a doctor and escorts the patient there.
- Features robust custom infrastructure that connects browser-based UI to the back-end ROS Python nodes.

### HEIST NIGHT | LEAD PROGRAMMER / PROJECT HEAD

Ongoing | Winner of "Best College Alpha" and Chosen to Showcase at BFIG

- Turn-based, local multiplayer stealth tactics game.
- Players scan on-screen QR code to use mobile devices as private game screens, without needing a companion app.
- Hosts local web content server at runtime to serve controllers.
- Features custom C#-to-JavaScript WebSocket networking using JSON API.

### GALDOR: VR FORTUNE TELLER | PROGRAMMER / DESIGNER

Fall 2016

- Seated Virtual Reality experience built for the GearVR.
- Features custom-built input system that uses quaternions to parse head nods or head shakes as input, instead of requiring the user to press any buttons.

### AUTONOMOUS TURTLEBOT | PROGRAMMER

Spring 2016

- Automatically parsed visual data from on-board Kinect sensor in to a live map.
- Used A\* to plan efficient routes towards unexplored regions of the map.
- Explored until the entire navigable area was discovered and parsed.

### WPI MAPPER | DEVELOPER TOOLS PROGRAMMER / PROJECT MANAGER

Fall 2015

- Calculated A\* routes around campus based on map networks stored remotely.
- Featured developer tools that allowed multiple people to edit map server data without conflicts.
- Built in Java using Agile development techniques over 7 weeks with a randomly assigned team of 8 other students.

### ROBOTIC FIREFIGHTER | MECHANICAL DESIGNER / PROGRAMMER

Spring 2015

- Autonomously navigated randomized mazes to locate and extinguish a fire.
- On-board odometry equipment tracked and reported robot and fire position.
- Designed, programmed in C, and built in 7 weeks.

## WORK EXPERIENCE

### CONTRACT WORK | ELECTRONIX ONLINE TUTOR

January 2016 – July 2016 | University of Memphis

- Helped design mock-up interfaces for tutor program.
- Constructed webpage framework.
- Worked and coordinated with a distributed team.

### EMAGINATION COMPUTER CAMPS | TECHNOLOGY COUNSELOR

June 2014 – Aug 2014 | Waltham, MA

- Taught technical skills to children aged 7 to 17 in daily classes, including programming and game design.

## SKILLS

### SOFTWARE

Languages:

C# • C • Python • JavaScript  
HTML5 • CSS3 • Java  
Ruby • SQL • RAPID

Tools and Utilities:

Unity3D • Visual Studio • Git  
ROS • Linux • RobotStudio  
Asana • Trello

### HARDWARE

Soldering • Arduino  
Mechanical Analysis  
Circuit Analysis

## ACCOLADES

- 2013 - 2016 | **Dean's List** from Undergrad Admissions
- 2016 | **Best College Alpha** from MassDiGI Game Design Challenge
- 2016 | **Chosen to Showcase** at Boston Festival of Indie Games

## EDUCATION

### WORCESTER POLYTECHNIC INSTITUTE (WPI)

BS in Robotics Engineering  
Minor in Game Design  
Expected May 2017 | GPA: 3.50

## COURSEWORK

### COMPUTER SCIENCE

Object Oriented Design  
Software Engineering  
Artificial Intelligence  
Webware

### GAME DESIGN

Game Design Process  
Storytelling in Interactive Media  
Novel Controllers and Interfaces  
Social Issues in Interactive Media

### ROBOTICS

Digital Circuit Design  
Static and Dynamic Systems  
Robotic Sensing and Navigation  
Industrial Robotics  
Controls Engineering  
Embedded Systems