

# Jonathan Mares

## contact

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## languages

English: native  
Russian: fluent  
Hebrew: fluent

## programming

**Proficient:** Java | Python  
Ocaml | C  
**Familiar:** Objective C  
HTML5 | Javascript |  
Matlab

## libraries/ tools

Github | Latex | Linux  
Heroku | Mathematica  
Xcode | Eclipse

## coursework

**Computer Science**  
Analysis of Algorithms  
Systems Programming  
Functional Programming  
Java & Data Structures  
Discrete Structures  
**Biomedical Engineering**  
Biomaterials & Medicine  
Cellular Principles of BME  
Molecular Princip. of BME  
**Chemical Engineering**  
Unit Operations Lab.  
Fluid Mechanics  
Heat & Mass Transfer  
Thermodynamics  
Kinetics & Reactor Design  
Separation Processes  
Process Dynamics  
Physical Chemistry I & II

## organizations

Cornell Data Science Club  
Kappa Sigma Fraternity

## certifications

**Coursera**  
Intro to Data Science

## activities

motorcycles | bicycles  
standup comedy  
volleyball | watersports  
Jazz | Classical | Piano

## education

May 2015 **Bachelor of Science** Cornell University, Ithaca, NY  
Chemical and Biomolecular Engineering; GPA: 3.1  
Additional coursework in Computer Science

## work experience

2014 **Novartis Vaccines** Holly Springs, North Carolina  
*Technical Development Intern*  
**Project:** Multipurpose vaccine platform development

- Developed experiments to define a pilot scale oil-in-water emulsion process
- Characterized emulsion using HPLC and particle sizing techniques

2013 **IPS- Integrated Project Services** Somerset, NJ  
*Engineering Intern*

- Conducted drawing walkdowns, communicated with contractors, and aided with project delivery tasks at the Integra LifeSciences job site
- Aided Design team with *AutoCAD* drawings and process flow calculations

2011–2012 **Hi-Tech Pharmacal** Amityville, NY  
*Validation and Technical Services Intern*

- Conducted surface area calculations of process equipment (kettles, tanks, agitators, pumps, etc.)
- Calculated product transfer line and filler machine volumes and initiated protocol to optimize the filling process of products

## research experience

2013–Now **Putnam Lab Group** Cornell University, Ithaca, NY  
*Undergraduate Researcher*  
**Project:** Reversibly Reactive Hydrogels for the Local Release of Protein Therapeutics

- Conducted UV/Vis Spectroscopy, hydrogel degradation, protein release, and swelling analysis

2009–2010 **Renal Research Institute** NY Medical College, Valhalla, NY  
*Research Assistant*

- Assisted with laboratory procedures such as Western Blotting, capillary analysis, and stem cell culture
- Work resulted in two publications in *AJP: Renal Physiology*

## projects

Now **Capstone Plant Design**  
Preparing a full scale feasibility study of a Penicillin production process. Work includes reactor and distillation column design, *Aspen* simulations, utilities design, and economic analysis.

Now **ReadMe-dot-Text**  
Designed in 24 hours at HackCooper a web application to convert images into speech for the visually impaired using *Python* for optical character recognition and with *Javascript*, *HTML*, and *jQuery*. The app makes use of IBM *Bluemix*, *Watson* text-to-speech API, and *Leap Motion* for gesture recognition. Winner of IBM's API prize.

Spring 2014 **Network Honeypot**  
Implemented multicore network system in C to track statistics of incoming packets

Spring 2014 **Pipelined CPU**  
Designed a 32-bit 5 stage pipelined RISC CPU using *Logism*

Fall 2014 **Cornell Events**  
iOS App that displays information about upcoming events at Cornell