Jonathan Mares

contact

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languages

English: native
Russian: fluent
Hebrew: fluent

programming

Python | Java | Ocaml
C | Matlab

libraries / tools

Github | Latex | Linux
Heroku | Mathematica
Xcode | Eclipse | PyCharm

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
Bioinformatics I
Machine Learning (in progress)

activities

motorcycles | bicycles
jazz | classical | piano
volleyball | watersports
standup comedy

education

Dec 2016 — **Bachelor of Science,** (Double Major) — Cornell University, Ithaca, NY
Chemical Engineering & Computer Science; GPA: 3.01

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
- Wrote a *Python* script to cleanly export particle size data

2013 — **IPS- Integrated Project Services** — Somerset, NJ
Engineering Intern
- Helped push the Integra pharmaceutical design and construction project ahead of schedule
- Worked with on-site contractors to conduct drawing walk-downs and close out project delivery tasks

2011–2012 — **Hi-Tech Pharmacal** — Amityville, NY
Validation and Technical Services Intern
Project: Cleaning validation protocol overhaul
- Responsible for calculating the Maximum Allowable Residue for drug products based on parameters such as surface areas of process equipment (kettles, tanks, agitators, pumps, etc.)
- Cut manufacturing losses by 75% by optimizing transfer and filling processes

projects

Spring 2015 — **ReadMe-dot-Text**
Designed in 24 hours with a team at HackCooper a web app 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 2015 — **TwitterPop**
Built a web app in 24 hours with a team at HackNY to display real time tweets based on user location. The app uses MongoDB and Google Maps & Twitter API's.

Spring 2015 — **Capstone Chemical Process Design**
Prepared a full scale feasibility study of a Penicillin production process. Technical work included reactor and distillation column design, *Aspen Plus* simulations, utilities design, and a robust process flow diagram. Economic analysis included capital and operating costs estimates for process and off plot support facilities.

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

research experience

2013–Now — **Putnam Lab Group** — Cornell University, Ithaca, NY
Undergraduate Researcher
- Conducted UV/Vis spectroscopy, hydrogel degradation, protein release, and swelling analysis
- Second author on publication pending submission in September

2009–2011 — **Renal Research Institute** — NY Medical College, Valhalla, NY
Research Assistant
- Performed mesenchymal stem cell culture and capillary image analysis
- Contributing author on two publications in AJP: *Renal Physiology*