Mark Dyehouse

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Education:

Carnegie Mellon University (Spring 2016) Pittsburgh, PA

Bachelor of Science in **Physics**, Minor in **Chinese Studies**
Winner of **Pickering Scholarship** for study abroad in Shanghai
Received **Pennsylvania Space Grant:** research at CMU Physics department summer 2014
Spring 2016 MCS **Dean's List with High Honors**

Shanghai International Studies University (Summer 2013) Shanghai, China

Coursework:

Imperative Comp.	Physical Analysis	Mech. Engineering	Rapid Prototyping Tech.
Functional Prog.	E&M I-II	Materials Sci.	Math Software
Computer Systems	Mechanics I-II	Racecar Engineering	Modern Physics Lab
Machine Learning	Quantum I-III	Electronics Lab	Stars, Galaxies, and the Universe
CMRoboBits	Thermal Physics	Mars Habitat	Advanced Chinese I-II

Skills:

- Programming Languages: Scala, Python, ML, C, some C++
- Frameworks, Platforms, and Libraries: Apache Kafka and Spark (Core, ML, GraphX, and Streaming), Cucumber for automated tests, Sci-kit library, Databricks, cv2, NumPy, some OpenCV, some ROS
- Software: Git, SBT, Atlassian (Bitbucket, Jira, Bamboo, Confluence), IntelliJ, gdb, VirtualBox, Maple, Solidworks
- Other skills: Agile (Scrum), Test-Driven Dev, 3D printing, laser cutting, some Arduino, federal gov. proposals
- Language: Mandarin Chinese (written and conversant)

Research & Work:

- **Software Engineer** (Omnicell Feb 2018-present): Telemetry data streaming, processing, and analytics pipeline using Scala, Spark, and Kafka with AWS, Databricks; **Won hackathon's "Most Cross-Functional" Award,** fuzzy text matching system for comparing customer and manufacturer descriptions of medical items using a customized variant of Levenshtein distance allowing for abbreviations
- **Software Developer** (Management Science Associates, Jan 2017-Jan 2018): Backend software development for data ingestion (ETL) pipeline using Spark (on YARN and standalone), Kafka, Scala, HBase, Cucumber, ElasticSearch; Hadoop environment, MapR
- **Research Assistant** (2016): Designing skin system for closed-loop inflatable aeroponic plant habitat on Mars (small team), responsible for plant support design and resource/power distribution map and organism selection:
  - **Poster at American Society of Gravitational and Space Research 2016 Conference**
- **Research Assistant** (Summer 2016): Working with Nao robots for perception of objects involved in playing soccer using sci-kit image, cv2; region of interest specifier for classifier; gui for data labeling (PyQt)
- **Lockheed Martin** (Summer 2015): College student technical specialist; Dev-ops and Network engineering
- **Research Internship** (Summer 2014): Characterized liquid-liquid interfacial isotherm, analyzed microscope image data (excel, matlab)

Projects and Activities:

- Built from scratch: optimized Binary Decision Trees & Multinomial Logistic Regression: speech predictions; neural net with customizable hidden layers and units: optical character recognition (2018)
- Language classification (multiple languages) and transcription (English) using only visual data (2016)
- Mars plant habitat light system design, constraints for protection from risks on Martian surface
  - Build18 Competition: (Fall, Spring 2013-14): piezo element, oscilloscope: knock triangulation
- Pololu 3pi robot programming for line following with onboard sensors, use servo motors to draw lines with a pen
- MHacks V project: Memory Museum using Unreal game engine for Oculus Rift
- 3D-Printed Microscope iPhone case (Fall 2014): glass bead lenses, designed in Solidworks
- Built Scala Trie for Spark GraphX, Spark ML; Chess with 3-D graphics using Python and VPython
- Palantir Puzzle Hunt at CMU (2013-15); Extra for Netflix show: Mindhunter, CMU Ski Team 2014-16
- International Justice Mission Co-President CMU chapter; Dossier Art Magazine Editor; CMU Ski Team