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Resources
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Enrico Borba

Coursework

Computer Science
Operating Systems
Machine Learning
Data Mining
Algorithms
Decidability & Tractability
Functional Programming
Language Theory
Graphics

Mathematics
Discrete Math
Bayesian Statistics
Abstract Algebra
Classical Analysis

Interdisciplinary
Biomolecular Computation
Biological Data Analysis

Software

Operating System
Linux (Ubuntu / Arch)
Mac OSX
Windows

Development & Workflow
neovim + mosh + tmux
git, mercurial, perforce
Sublime Text, Atom
Xcode
i3

Design
Photoshop CS6
Sketch 3
Krita

Office Tools
Apple Pages & Keynote
MS Office Suite

Languages

Fluent
English
Português

Proficient
Español

Basic
日本語 (Japanese)

Education

California Institute of Technology (2015 - Present)
B.S. Computer Science (expected graduation 2019)

Work Experience

Van Valen Lab Research Student (Sept 2018 - Present)
Using Machine Learning (CNNs & NNs) to perform segmentation & cell tracking on raw biological cell data. Currently experimenting in improving the cell tracking model accuracy on detecting divisions in HeLa cells.

Mitsubishi Engineering Intern in Japan (Summer 2018)
Worked on the systems division to create the infrastructure for sensor data collection & processing inside next generation vehicles. Using biometric sensors, and vehicle data (ex. steering wheel angle) I constructed a model to detect drowsiness or impairment in drivers.

Facebook Software Engineering Intern (Summer 2017)
Worked with the Search as a Service (SaaS) team. I wrote a scaled down version of the existing SaaS platform for teams looking to test out the service. This involved a lot of scripting (bash/Python), a lot of data fetching (MySQL, Hadoop, Hive), and a web frontend (HHVM).

Google Software Engineering Intern (Summer 2016)
Wrote an RPC (remote procedure call) tracing tool for the Vanadium project in Golang. Set up a protocol, "HTTP over RPC", which would serve HTML pages which contained data on the RPCs. I also worked with Google Street View to enable car operators to mark road conditions (dirt, private, or public) with a joystick.

Uncanny Vision Intern (2015 - 2016)
Worked on a variety of computer vision projects ranging from Simultaneous Localization and Mapping (SLAM) implementation to multi-sensor integration. Main project consisted of porting and optimizing a post-data collection MSCKF (Multi State Constrained Kalman Filter) implementation in MATLAB to C++ for realtime data analysis on less capable hardware.

Projects & Programming Languages

Python-CRN
A Chemical Reaction Network simulator presented as a Domain Specific Language. Supports stochastic and deterministic networks.

Crick
HQTrivia Human assistant: Using OCR from a continuous screen capture, provides short, expressive, and context-aware Google queries.

XaTeLite ("satellite")
LaTeX compilation system served over HTTP. A user can edit the source over SSH and visit a website for the produced pdf.

Mollusk
Unifies the best parts of two shells xonsh & fish: fish's autocompletion + xonsh's environment.

Netflix MovieLens Factorization
Used several Machine Learning methods to create a movie recommendation system.

Expert
Python 3.7+ ●●●●●

Advanced
Processing ●●●●○
C++ ●●●●○

Proficient
OCaml ●●●○○
Haskell ●●●○○
C ●●●○○
HTML + JavaScript ●●●○○

Basic
Swift ●●●○○
R ●●●○○
Elixir ●●●○○
Golang ●●○○○
Hack (HHVM) ●●○○○
Rust ●○○○○
MATLAB ●○○○○