

Baojia(Tony) Tong

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Skills

Languages Python, C++, SQL

Packages Pandas, NumPy, Sklearn, Tensorflow, Flask, ROOT

Tools HTML, L^AT_EX, Bash, SVN, Git

Experience

Kensho Technologies

Machine Learning Engineer

Cambridge, MA

Oct 2018–present

- Built a **general purpose synonym generator** based on Wikipedia open data
- Architected an algorithm to **extract tabular and textual** data from financial PDF documents
- Productionized an information ingestion and extraction pipeline for financial estimate data

Harvard University

Ph.D. Student

Cambridge, MA; Geneva, Switzerland

Sep 2012–May 2018

- Searched for double Higgs Boson production at CERN's Large Hadron Collider, introduced novel signal regions to **triple the search sensitivity**, corrected translational modeling effect and **improved background modeling**; published as thesis
- Searched for rare triple Boson signals, **optimized event selections** using XGBoost to double the sensitivity
- Implemented a second order correction in Hough Transform extrapolation in C++, **reduced the fake local reconstruction rate** by 50%, and **saved hundreds of hours of computation time** every day
- **Designed live monitoring software** for reconstruction algorithms and detector performance, inspected and resolved bugs and detector malfunctions within days to maintain data quality
- **Organized weekly meetings** with a group of ten people across the international team for one year long monitoring software development
- Taught undergraduate analytical physics sections, introduction to electronics and experiment analysis in Python, **received two teaching awards** based on student reviews

California Institute of Technology

Undergraduate Student

Pasadena, CA

Sep 2008–Jun 2012

- Analyzed particle collision data, **measured fragmentation behaviors** in unprobed kinematic regions
- Developed an optical position sensor, **validated sensor thermal stabilities** under different conditions
- Designed double auction convergence experiments, **conducted twelve-people experiments in person**, analyzed time series data in Python; published paper

Education

Harvard University, Ph.D. in Physics

Sep 2012–May 2018

California Institute of Technology, B.A. with honors in Physics

Sep 2008–Jun 2012