

Baojia(Tony) Tong

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Skills

Languages Python, C++, Chinese
Packages Pandas, Flask, NumPy, Sklearn, XGBoost, ROOT
Tools HTML, L^AT_EX, Bash, SVN, Git

Experience

Insight Boston, MA
Data science fellow 2018-present

- Formulated a web-app to convert live meeting into key memos in a fast, private and interpretable fashion
- Streamlined an **audio recognition** software to convert sound files into texts
- Integrated **natural language processing tools** for summarization and highlights

Harvard University Cambridge, MA; Geneva, Switzerland
Ph.D. student 2012-2018

- Searched for double Higgs Boson production at CERN's LHC, **tripled the search sensitivity** by introducing novel signal regions, **improved background modeling** by correcting modeling effects; published as thesis
- Optimized selection using XGBoost to double the search sensitivity for rare triple boson signals
- Implemented a second order correction in Hough Transform extrapolation in C++, **reduced the fake local reconstruction rate** by 50%, and **conserved hundreds of hours of reconstruction time** every day
- **Designed live monitoring software** for reconstruction algorithms and detector performance, inspected and resolved bugs and detector malfunctions in days
- **Organized weekly meetings** for monitoring software development, with a team of ten people within the international collaboration
- Taught undergraduate analytical physics sections, introduction to electronics and experiment analysis in python, **received teaching awards**

California Institute of Technology Pasadena, CA
Undergraduate student 2008-2012

- Analyzed particle collision data, measured higher order fragmentation behaviors in unprobed kinematic regions
- Developed an optical position sensor, validated its stability under different thermal conditions
- Designed and conducted multiple double auction convergence experiments, analyzed the data; published paper

Education

Harvard University, 2018 Ph.D., Physics
California Institute of Technology, 2012 B.A. with honors, Physics