

# Baojia(Tony) Tong

Boston, MA

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## Skills

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**Languages** Python, C++, Chinese

**Packages** Pandas, Flask, NumPy, Sklearn, XGBoost, ROOT

**Tools** HTML,  $\text{\LaTeX}$ , Bash, SVN, Git

## Experience

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### Insight

Boston, MA

*Data science fellow*

2018-present

- Built a web-app to convert live meeting audio into summary text in a fast, private and interpretable fashion
- Streamlined the Sphinx **audio recognition** software to convert sound files into text
- Integrated **natural language processing tools** including spacy 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, introduced novel signal regions to **triple the search sensitivity**, corrected translational modeling effect and **improved background modeling**; published as thesis
- Optimized event 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 **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** for monitoring software development, with a group of ten people across the international team
- Taught undergraduate analytical physics sections, introduction to electronics and experiment analysis in python, **received teaching awards** based on student reviews

### 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 using Matlab
- Designed double auction convergence experiments, conducted twelve-person experiments in person, analyzed time series data in Python; published paper

## Education

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Harvard University, Ph.D. in Physics

2018

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

2012