WEI-CHIH HUANG

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EDUCATION

PhD in Physics, Texas A&M University, US — Aug. 2019 - Aug. 2025 (expected)
BS in Physics, National Tsing Hua University, Taiwan — Aug. 2015 - Jun. 2019

PUBLICATIONS

- Probing the dark sector with nuclear transition photons — arxiv
  Bhaskar Dutta, ***Wei-Chih Huang****, Jayden L. Newstead*
- Inelastic nuclear scattering from neutrinos and dark matter — arxiv
  Bhaskar Dutta, ***Wei-Chih Huang****, Jayden L. Newstead, Vishvas Pandey*
- Short Baseline Neutrino Anomalies at Stopped Pion Experiments — arxiv
  Iain A. Bisset, Bhaskar Dutta, ***Wei-Chih Huang****, Louis E. Strigari*
- Axion-Like Particle Production at Beam Dump Experiments with Distinct Nuclear Excitation Lines — arxiv
  Loyd Waites, Adrian Thompson, Adriana Bungau, Janet M. Conrad, Bhaskar Dutta, ***Wei-Chih Huang****, Doojin Kim, Michael Shaevitz*
- Exciting Prospects for Dark Matter at Large-Volume Neutrino Detectors — arxiv
  Bhaskar Dutta, ***Wei-Chih Huang****, Doojin Kim, Jayden L. Newstead, Jong-Chul Park, Iman Shaukat Ali*

EXPERIENCE

Research Assistant - Physics Department, Texas A&M University — Aug. 2019 - present

- Built physical models and conducted the statistical analysis on the large multi-dimensional data by Python
- Automized and visualized the analysis with NumPy, SciPy, Pandas, and Matplotlib
- Accelerated the analysis by 1000 times with dedicated algorithm, multiprocessing, caching, and C/C++
- Published 5 papers in high impact journals and presented several successful talks at international conferences

Independent Data Science Researcher - Pro Cyclists Race Analysis (github repo) — Apr. 2022 - present

- Web scraped a website using BeautifulSoup and increased the performance by 500% with multi-threading
- Preprocessed the data (clean, format, normalize) with NumPy, Pandas, SciPy, and scikit-learn
- Construct machine learning models with PyTorch and sciki-learn
- Saved 80% costs compared to AWS, GCP, Azure by deploying data and model to Runpod (GPU cloud)
- Achieved 20% better performance than a trivial model

Data Science Ambassador - Physics Department, Texas A&M University — Aug. 2022 - Aug. 2023

- Provided training and consulting to the department and the students (webpage)
- Designed interactive workshops on topics including Python, Linux, statistics, data analysis, and machine learning

Full-Stack Web Developer/Project Manager - Aggie Coding Club — Jan. 2022 - Jan. 2023

- Led a 10-people team and organized the tasks to the team members
- Provided training and mentoring for the team members about Git, GitHub, Python, Linux and database
- Developed a dynamic and responsive website using Django (Python) and Bootstrap (HTML, CSS, JavaScript)
- Designed PostgreSQL database schema to save the disk space by 20%
- Built a referral machine to reduce the time of networking by 40%
- Deployed the website at zero cost on Heroku cloud platform

Teaching Assistant - Physics Department, Texas A&M University — Aug. 2019 - Dec. 2022

- Taught and graded college Newtonian Mechanics, Electromagnetism, Thermodynamics, and Statistical Mechanics
- Demonstrated hands-on experiments and post-lab data analysis