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noctildon.github.io
Google Scholar
InspireHEP
Linkedin
GitHub

Wei-Chih Huang

Education

Aug. 2019 – Dec. 2025 *PhD in Physics*
Texas A&M University, US

Aug. 2015 – Jun. 2019 *BS in Physics*
National Tsing Hua University, Taiwan

Fields of Interest

Dark Matter, High Energy Physics (phenomenology), Nuclear Physics, Nuetrino Physics

Professional Experience

Aug. 2019 – present **Graudate Research Assistant**
Physics & Astronomy department, Texas A&M University, US

- Designed and calculated the nuclear structure by FORTRAN, MPI/OpenMP, Python, C++ and Mathematica
- Construct nuclear scattering models for dark matter and axion
- Programmed Python/C++ to do data analysis and statistical analysis

Jun. 2025 – Aug. 2025 **Data Science PhD Internship**
Capital One

- Developed predictive models for future payments and default probability with 99% accuracy
- Built PyTorch machine learning models (GBM, NN, LSTM) to optimize loss mitigation strategies for auto loans
- Fetched data from SnowFlake and did statistical data analysis on AWS
- Collaborated with product managers to translate model outputs into action-based decisions

Aug. 2022 – Aug. 2023 **Data Science Ambassador**
Physics & Astronomy department, Texas A&M University, US

- 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

Nov. 2017 – Jun. 2019 **Undergraudate Research Assistant**
Physics department, National Tsing Hua University, Taiwan

- Formalized inflation and late-time acceleration (dark energy) by $f(R)$ modified gravity
- Programmed Mathematica and Python to simulate the evolution of the universe

Jul. 2018 – Aug. 2018 **Undergraduate Summer Research**
The University Consortium of ALMA–Taiwan

• Studied dark matter in merging galaxies

• Used CASA to clean, analyze and visualize the data imaging from extragalactic database to infer the dark matter distribution

Publications

Novel Approach to Investigate ATOMKI Anomaly Using Coherent CAPTAIN-Mills Detectors inspireHEP

Oct. 2024 Bhaskar Dutta, Bai-Shan Hu, ***Wei-Chih Huang***, Richard G. Van de Water

Indirect detection of dark matter absorption in the Galactic Center inspireHEP

Apr. 2024 Kimberly K. Boddy, Bhaskar Dutta, Addy J. Evans, ***Wei-Chih Huang***, Stacie Moltner, Louis E. Strigari

Prospects for Light Dark Matter Searches at Large-Volume Neutrino Detectors inspireHEP

Feb. 2024 Bhaskar Dutta, ***Wei-Chih Huang***, Doojin Kim, Jayden L. Newstead, Jong-Chul Park, Iman Shaukat Ali

Short Baseline Neutrino Anomalies at Stopped Pion Experiments inspireHEP

Oct. 2023 Iain A. Bisset, Bhaskar Dutta, ***Wei-Chih Huang***, Louis E. Strigari

Probing the dark sector with nuclear transition photons inspireHEP

Feb. 2023 Bhaskar Dutta, ***Wei-Chih Huang***, Jayden L. Newstead

Inelastic nuclear scattering from neutrinos and dark matter inspireHEP

Dec. 2022 Bhaskar Dutta, ***Wei-Chih Huang***, Jayden L. Newstead, Vishvas Pandey

Axion-Like Particle Production at Beam Dump Experiments with Distinct Nuclear Excitation Lines inspireHEP

Aug. 2022 Loyd Waites, Adrian Thompson, Adriana Bungau, Janet M. Conrad, Bhaskar Dutta, ***Wei-Chih Huang***, Doojin Kim, Michael Shaevitz, Joshua Spitz

Talks

Apr. 2023 **Interplay of Nuclear, Neutrino and BSM Physics at Low-Energies**
Probing BSM particles using inelastic nuclear scattering

Oct. 2022 **Particle Physics on the Plains**
Inelastic Dark Matter-Nucleus Scattering in Stopped-pion Experiments using Transition Photons

May. 2022 **2022 Phenomenology Symposium**
Inelastic neutrino-nucleus and dark matter-nucleus scattering

Jul. 2021 **2021 Meeting of the Division of Particles and Fields of the American Physical Society (DPF21)**
The calculation of inelastic neutrino-nucleus scattering

Oct. 2021 **2021 Magnificent CEvNS Workshop**
Inelastic neutrino-nucleus and dark matter-nucleus scattering

Teaching Experience

2022 – 2023 **TAMU Physics Department**
Workshop Lecturer: Data Science in Physics (webpage)

Fall 2022 **TAMU Physics 207, Electricity and Magnetism for Engineering and Science**
Teaching Assistant

Summer 2022 **TAMU Physics 207, Electricity and Magnetism for Engineering and Science**
Teaching Assistant (Lab)

Spring 2022 **TAMU Physics 207, Electricity and Magnetism for Engineering and Science**
Teaching Assistant

Fall 2021 **TAMU Physics 206, Newtonian Mechanics for Engineering and Science**
Teaching Assistant

Spring 2021 **TAMU Physics 207, Electricity and Magnetism for Engineering and Science**
Teaching Assistant

Fall 2020 **TAMU Physics 207, Electricity and Magnetism for Engineering and Science**
Teaching Assistant

Spring 2020 **TAMU Physics 206, Newtonian Mechanics for Engineering and Science**
Teaching Assistant

Fall 2019 **TAMU Physics 408, Thermodynamics and Statistical Mechanics**
Teaching Assistant (grader)

Spring 2016 **Shu Guang Girls' Senior High school**
Teaching Assistant (STEM subjects)

Honors and Awards

Data Science Ambassador Scholarship
Fall 2022 Data Science Ambassador Scholarship Program at Texas A&M Institute of Data Science

Undergraduate Research Scholarship
Fall 2018 Scholarship for the $f(R)$ gravity project

Three Years Tsing Hua University Scholarship

2015 - 2018 Tuition wavier, housing and textbooks

Programming Skills

Python, NumPy, Pandas, Matplotlib, SciPy, PyTorch, TensorFlow

C++, Bash, Git, GitHub, Docker, Mathematica, Javascript, LaTeX