

Arthur (Yi-Ting) Lin

Massachusetts Institute of Technology
Department of Physics
77 Massachusetts Ave., Cambridge MA, US

arthur72@mit.edu
Phone(US): +1 (617) 685-8971

Education

Massachusetts Institute of Technology, US **2023-present**
B.Sc. in Physics and Mathematics (expected) **GPA: 5.0/5.0**
Relevant Coursework:
Completed:
Grad: Quantum Field Theory I.
Undergrad: Relativity II (fast paced undergrad GR), Quantum Physics II,
Introduction to Topology, Nonlinear Dynamics: Continuum Systems, Real Analysis.
In Progress:
Grad: Quantum Field Theory II, String Theory and Holographic Duality,
Statistical Mechanics I, Geometry of Manifolds I (Riemannian Geometry).
Undergrad: Algebra I (Abstract and Linear Algebra).
Interest: Quantum Field Theory, Nuclear and Particle Theory.

Research Experience

LHCb Group, Dept. of Physics, Massachusetts Institute of Technology, US **2024**
Keywords: machine learning, data analysis, LHCb experiments.
Supervisors: Prof. Michael Williams, Dr. Blaise Delaney, Dr. Adrian Casais Vidal.
• Implemented machine learning algorithms to perform signal classification and multivariable statistics.
• Studied rare/BSM decays " $B \rightarrow KX$, $X \rightarrow \eta\pi^+\pi^-$ " for different particles X .
• First to extract the branching fraction of " $B^+ \rightarrow K^+ J/\psi$, $J/\psi \rightarrow \eta\pi^+\pi^-$ ".
• Discovered and quantified the process " $B^+ \rightarrow K^+ \eta_c$, $\eta_c \rightarrow \eta\pi^+\pi^-$ ".
• Presented in the group meetings and pushed further studies.

Dept. of Mech. E., National Chung Hsing University, Taiwan **2021-2022**
Keywords: perturbation theory, python simulation, international presentation.
• Developed theoretical models using perturbation theory.
• Simulated pendulum motion with python.
• Classified oscillation modes under excitation for over 70 configurations.
• Presented to High School of Komoba, University of Tsukuba in Japan.
• Attended city science fair and the school annual research presentation

Awards

Physics Olympiads
Gold Medal, International Physics Olympiad, rank 11 2022
Silver Medal, Asian Physics Olympiad, rank 16 2022
Gold Medal, Asian Physics Olympiad, rank 19 2021

Teaching

National Taiwan Normal University, Taiwan **2023, 2024**
International Physics Olympiad summer camp.
• Delivered lectures to classes of 35 high school students on undergrad level physics.
• Coauthored 200-page lecture notes covering math methods to quantum physics.

Taichung First Senior High School, Taiwan **2020-2024**
IPhO preparation study group and lectures.
• Dedicated over 200 hours in organizing and giving lectures.
• Covered the foundational undergrad physics such as Electrodynamics and Classical Mechanics.
• Written/collected more than 20 problems tailored to Physics Olympiads.
• Supported preparation of 3 later International Physics Olympiad medalists.

Outreach

• Hosted academic program with High School of Komoba, University of Tsukuba, Japan. 2022