Kirby Hermansen, Ph.D.

✉ khermansen@proton.me
kirbyherm.github.io
 GitHub
 LinkedIn

EDUCATION

Michigan State University, East Lansing, MI — December 2023
Ph.D. in Physics; Graduate Certificate in High-Performance Computing — GPA: 3.7/4.0

University of Notre Dame, South Bend, IN — May 2015
B.S. in Physics, Economics — GPA: 3.56/4.0

PROFESSIONAL EXPERIENCE

KPMG, Tax, Economic Services — 2024–
Senior Associate, Quantitative Analysis — Detroit, MI
- Automate pipelines for client datasets, digitizing and processing thousands of invoices and financial data
- Identify potential FWA within invoices, summarize, and communicate results to client
- Document and package code for repurposing on new client data

Facility for Rare Isotope Beams (FRIB) — 2017–
Graduate Research Assistant, Nuclear Astrophysics Experiments — East Lansing, MI
- Clean, cut and analyze experimental data to constrain beta-decay transitions in select neutron-rich nuclei
- First author on a numerical sensitivity study of nuclear reaction rate variations in core-collapse supernovae simulations
- Manage experiment and analysis project timelines using Agile methodology
- Contributed to 12 NSF-funded experiments and ongoing detector systems commissioning
- Communicate scientific projects to public via guided tours of the cyclotron facility

Graduate Research Assistant, SECAR Beam Development — 2018–
- Designed a machine-learning pipeline for optimizing magnet settings in the SECAR separator from the ground up
- Ported the pipeline to Microsoft Azure cloud resources as a 2021 ICER Cloud Computing Fellow
- Optimized results have been employed in an NSF-funded experiment, and part of a forthcoming paper

Travelers Insurance Fixed Income Investments — 2015–2017
Senior Associate Quantitative Analyst — St. Paul, MN
- Assessed return attribution on a $30 billion municipal bond portfolio, communicated results to VPs
- Modeled asset/liability matching to minimize portfolio systematic and curve risk
- Managed the department SharePoint database and implemented workflows for faster, clearer communication
- Began pursuit of a CFA charter and passed the first of three exams

European Organization for Nuclear Research (CERN) — 2014
Undergraduate Research Assistant and Programmer — Geneva, Switzerland
- Performed sensitivity studies comparing lifetime ratios and kinematic variables to better determine B-meson lifetimes
- Developed and programmed elements of the ROOT/R interface library, later distributed in ROOT

TECHNICAL SKILLS AND INTERESTS

Concepts: Machine Learning ● Big Data Pipeline Analysis ● High-Performance Computing ● Software Management ● Version Control ● Cloud Computing ● Open-Source Collaboration ● Linux Computing

Programming: *Proficient:* Python ● C++ ● Git ● Bash ● Azure ● Docker ● LaTeX ● PyTorch ● ROOT
Familiar: HTML ● Node.js ● SQL ● MS Access ● SharePoint ● MPI ● R ● JavaScript ● VBA

Publications: 10 publications; 3 refereed; 3 in prep. *Citations:* 16; *h*-index: 2

Language: *Native:* English; *Basic:* Spanish ● French

PERSONAL PROJECTS

Major League Baseball Daily Hit Predictor (HitBot) — 2022–
- Scraper to pull daily updates from MLB player stats, along with future matchup data and store in a private database
- Pipeline a ML algorithm to predict the most likely players to get a hit on a daily basis and upload to website