Jan Czeslaw Bierowiec

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EDUCATION

Fordham University at Rose Hill
Bachelor of Science in Engineering Physics | **Concentration:** Electrical Engineering | **GPA:** 3.5 — May 2024
Master of Science in Computer Science | **Concentration:** Software Engineering | **GPA:** 3.8 — May 2025

EXPERIENCE

Teacher of Mathematics & Physics, *Loyola School*, Manhattan, NY, USA — December 2025 - Present

- Lead instruction for non-honors Introductory Physics and AP Pre-Calculus courses, delivering clear, standards-aligned lectures and differentiated instruction for diverse learning levels.
- Develop and implement comprehensive curricula, including lesson plans, homework, quizzes, unit exams, and AP-style assessments, with an emphasis on conceptual understanding and problem-solving.
- Manage all classroom operations, including grading, student progress tracking, and academic feedback to support student growth and performance.
- Produce supplemental materials such as guided practice worksheets to reinforce key mathematical and physical concepts.

Tutor, *The Bridge Golf Foundation*, Manhattan, NY, USA — August 2025 - Present

- Tutored small groups of 3–5 students in Algebra I, Algebra II, and Geometry to prepare for the New York State Regents exams.
- Developed customized practice worksheets to reinforce key concepts and address individual student needs.
- Fostered an engaging learning environment that balanced individualized support with group collaboration.

Adjunct Professor of Physics, *Fordham University*, Bronx, NY, USA — August 2025 - Present

- Lead undergraduate physics lab sessions by explaining theoretical concepts, demonstrating equipment use, and guiding students through hands-on experiments.
- Supervise and coordinate with Teaching Assistants to ensure consistent instruction, grading accuracy, and lab preparedness.
- Troubleshoot technical issues with lab apparatus and software in real time to maintain smooth and effective instruction.
- Communicate promptly with students via email to address questions, clarify procedures, and support academic success.

Tutor, *Knack*, Bronx, NY, USA — September 2022 - Present

- Facilitated 1-on-1 and small group tutoring sessions in Computer Science, Math, and Physics, tailoring instruction based on individual learning styles.
- Applied active recall and spaced repetition techniques to boost student retention and midterm/final performance.
- Utilized Python, Java, and C++ for practical demonstrations and coding assignments.

Course Instructor: Arduino, *MakeInspire*, Queens, NY, USA — September 2025 - December 2025

- Designed and delivered a structured Arduino curriculum for a group of 6 students, covering topics from basic electronic components to coding in the Arduino IDE.
- Taught students fundamental hardware and software skills, including breadboarding, circuit design, sensor integration, and programming logic for interactive projects.
- Guided students through hands-on projects that built confidence in STEM concepts.

Tutor, *ibidPREP*, Manhattan, NY, USA — August 2025 - December 2025

- Designed and developed comprehensive instructional materials—including tests, worksheets, and diagnostic assessments—to support student learning and track progress.
- Delivered one-on-one tutoring for SHSAT preparation, tailoring lessons to individual student strengths and areas for improvement.
- Co-led mathematics instruction for a class of 16 students in preparation for the ISEE exam, fostering collaborative learning and test readiness.

Tutor, *iKlass Tutoring LLC*, Queens, NY, USA — October 2024 – August 2025

- Provided personalized math instruction to middle and high school students (Grades 7–12), covering algebra, geometry, trigonometry, and precalculus, resulting in higher test scores and increased classroom confidence.
- Designed and led engaging Python workshops that introduced students to mathematical modeling and logical reasoning through code.
- Cultivated strong rapport with students by adapting explanations and problem sets to suit diverse learning styles and curriculum standards.

Teaching Assistant: Computer Algorithms, *Fordham University*, Bronx, NY, USA — January 2025 - May 2025

- Led weekly review sessions and office hours, reinforcing concepts in recursion, time complexity, and algorithm design.
- Designed supplemental lessons using visualizations and real-world analogies to improve comprehension.
- Assessed student work and provided formative feedback using rubrics aligned with course learning outcomes.

Teaching Assistant: C++ Programming, *Fordham University*, Bronx, NY, USA — September 2023 - May 2025

- Coached students through C++ programming labs with emphasis on debugging, logic development, and syntax understanding.
- Provided hands-on assistance in writing functions, manipulating data structures, and implementing object-oriented principles.

Teaching Assistant: Introductory Physics Lab I & II, *Fordham University*, Bronx, NY, USA May 2022 - May 2025

- Supported physics lab courses by guiding students through hands-on experiments and real-time problem-solving.
- Demonstrated lab procedures and concepts (e.g., projectile motion, circuits) to reinforce theoretical material.
- Provided individualized troubleshooting support to enhance student comprehension and lab skills.
- Evaluated lab reports and pre-lab submissions, ensuring clarity of scientific reasoning.

Science TEU Program Intern, *American Museum of Natural History*, Manhattan, NY, USA June 2024 - August 2024

- Completed graduate-level pedagogy training focused on culturally responsive teaching and inquiry-based learning.
- Developed and taught climate science lessons to high school students, aligning content with NGSS standards.
- Applied instructional models such as Backward Design and Constructionism to enhance learning outcomes.

Undergraduate Researcher, Quantum Chromodynamics, *Fordham University*, Bronx, NY, USA July 2023 - December 2023

- Developed documentation for QCD SU(3) Lattice Code for better student understanding of the theoretical references of the simulation in development.
- Wrote code for the SU(3) model based on the SU(2) model to create a more realistic simulation of a lattice.

Undergraduate Researcher, Physics Education, *Fordham University*, Bronx, NY, USA May 2022 - July 2023

- Created Physim, an interactive physics learning platform integrating simulations, coding exercises, and theory.
- Developed instructional modules using LaTeX, p5.js, and PyScript to support inquiry-based and constructivist learning.
- Designed tools for students to explore mechanics, waves, and electricity through hands-on, browser-based activities.
- Currently developing backend features for user progress tracking and instructor customization.

Faculty Advisor Student Assistant, *Fordham University*, Bronx, NY, USA July 2022 - August 2022

- Provided peer insight to incoming students on academic life, majors, and campus experience at Fordham University, fostering a welcoming and informed transition.
- Assisted students with course selection and registration, ensuring alignment with degree requirements and academic goals.

VOLUNTEERING

Troop Leader and Scout Instructor, *Polish Scouting Organization*, Brooklyn, NY, USA September 2019 – August 2025

- Mentor and instruct youth ages 6–18 in outdoor skills, leadership, and community service in a bilingual (English–Polish) environment.
- Plan and lead weekly educational programs covering topics such as navigation, first aid, environmental science, and teamwork.
- Design and facilitate weekend camping trips and multi-day excursions, emphasizing experiential learning and character development.
- Created 7mdhzhp.org, a digital hub to support scouting pedagogy and event coordination.
- Oversee logistics, budgeting, and parent communication for events involving 30–50 participants.

PUBLICATIONS

American Journal of Physics, Volume 92 Issue 6 June 2024

- A new unit of measurement for introductory physics lab

RESEARCH INTERESTS

My research interests primarily lie in Educational Technology, particularly in the design and development of interactive learning systems that bridge theory and application. I am passionate about integrating my backgrounds in Mathematics, Physics, and Computer Science to create tools that enhance problem-solving, conceptual understanding, and engagement in STEM education.

In addition to my work in educational innovation, I also maintain strong interests in Robotics and Mechatronics, where I aim to explore the intersection of hardware and software systems. Through these disciplines, I seek to develop intelligent, hands-on learning environments that merge computational thinking with physical experimentation — empowering learners to better understand the principles that drive modern technology.

UNDERGRADUATE COURSEWORK

Mathematics

Discrete Mathematics
Calculus I
Calculus II
Multivariable Calculus I (Calculus III)
Multivariable Calculus II (Calculus III)

Computer Science

Introduction to C++
Object Oriented C++
Data Structures
Computer Organization
Programming for Math & Science
Introduction to Robotics
Graphic Design & Digitial Tools

Physics

Introductory Physics I (Kinematics)
Introductory Physics II (E & M)
Laboratory Techniques & Methods
Classical Mechanics
Experimental Techniques in Engineering & Physics
Mathematical Methods in Physics
Computational Physics (Audited)

Introductory Physics I Lab
Introductory Physics II Lab
Modern Physics
Electricity & Magnetism
Thermodynamics & Statistical Physics
Solid State Physics
Quantum Mechanics (Audited)

GRADUATE COURSEWORK

Computer Science

Operating Systems
Computer Language Theory
Databases
Machine Learning
Distributed Systems
Applied Econometrics
Computer Algorithms
Programming Languages
Data Mining
Software Engineering
Computer Science Capstone Project

SKILLS

- **Teaching Skills:** Lesson planning, instructional design, differentiated instruction, classroom management, formative assessment, 1-on-1 and small group tutoring, curriculum development
- **Educational Technology:** PyScript, p5.js, Arduino, LaTeX, Google Classroom, Overleaf, GitHub, Visual Studio Code
- **Programming Languages:** Python, Java, C++, Swift, JavaScript, HTML, CSS, Mathematica
- **Design & Media Tools:** Adobe Illustrator, Photoshop, InDesign, AutoCAD, SOLIDWORKS
- **Languages Spoken:** English (fluent), Polish (fluent)

REFERENCES

Christopher Aubin
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