

Aliaksandr Melnichenka

aliaksandr@melnichenka.com

melnichenka.com — LinkedIn — GitHub @astrosander

First-gen physicist and open-science founder (135 k learners) developing new angular diagnostics for magnetised turbulence—merging theory, simulations, and real sky data.

ENTREPRENEURSHIP & GLOBAL IMPACT

Founder, Savchenko Solutions
savchenkosolutions.com

Oct 2023–Present

- **Launched the world’s largest open archive of Savchenko Physics solutions**, serving **135000+** **monthly learners** across 42 countries; *only pinned resource* on Beyond Curriculum and cited in the US Physics Team syllabus.
- Built and led a fully remote, **300-person volunteer team** (students → professors); published **1600+** **original solutions** in RU & EN; **3M pageviews/yr**.
- Recognized by Yandex (#1 search result), and integrated into Belarusian Olympiad training pipelines (90% of medalists use platform).

Project Lead, BelPhO.org

Sep 2023–Dec 2023

- Digitized a **35-year national Olympiad archive**; appointed official Belarus contact on IPhO-Unofficial; media partner of BelPhO 2024.
- Accelerated rural school participation (+60 % practice material downloads in underserved regions).

RESEARCH — PUBLICATIONS

University of Wisconsin–Madison & University of Alberta

Mar–Aug 2025

- **Lead author** – “*A New Angular Metric for Faraday-Thin Synchrotron Turbulence*”
Target venue: *ApJ Letters*.
 - Derived first closed-form two-point statistic for Kolmogorov-type MHD cascades.
 - Bench-tested on 512^3 MHD cubes and archival LOFAR rotation-measure grids.
 - Mentors: A. Lazarian ($h = 98$), D. Pogosyan ($h = 64$); full Overleaf owned and version-controlled by me.

SELECT HONORS & RECOGNITION

- **Presidential Award for Gifted Youth**, Belarus (top national honor).
- **Belarus Physics Team** – top-10 nationally; IPhO reserve; three-time national Olympiad medalist (Gold '22, Silver '24, Bronze '23).
- **Arduino Global Feature**: DIY bike-computer showcased on official FB page (2024).
- **Top-20 GitHub Contributor** in Belarus (open-source index, 2023).
- **\$240000 Trustee (full-ride) Scholarship**, Berea College.

EDUCATION

Berea College, KY

Aug 2024–May 2027 (expected)

B.A. Physics & Mathematics & CS (triple major)— GPA 3.9.

Course highlights: Quantum ME, Relativity, Numerical Methods, AI for Science.

Lyceum of Belarusian State University

2022–2024

Physics specialization; GPA 9.92/10 — bypassed entry exam via Olympiad rank.

OPEN-SOURCE HIGHLIGHTS

- Integrated IPhO-2024 results into global database within 24h of release; refactored scraping engine (Python+Selenium).
- Maintainer: `cambridge-dictionary-audio` (15000downloads) – Python API for audio pronunciations.

TECHNICAL TOOLBOX

Code: Python — C++ — JavaScript (Node/Express) **Data:** NumPy, Matplotlib, Pandas **Infra:** AWS — PostgreSQL **Design:** Figma, Inkscape **Languages:** English (fluent), Belarusian (native), Russian (native-equiv.).

LEADERSHIP PHILOSOPHY

First-generation college student leveraging Olympiad-honed problem-solving to democratize physics education and push frontiers of black-hole science. Committed to open-source, cross-border mentorship, and scaling impact to millions.