Andre V. Perez

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EDUCATION

Columbia University | School of Engineering and Applied Sciences | Named Scholar: He Family Scholarship *Expected August 2026*
Bachelor of Science in Biomedical Engineering, Minor in Chemical Engineering and Entrepeneurship & Innoavation New York, USA
Professional Societies: Biomedical Engr. Society, American Medical Students Assoc., Charles Drew Premed Society, The Chemists' Club

Tuguegarao City Science High School | Science, Technology, Engineering, Math Track *June 2016 – June 2022*
High School Diploma | Graduated with Highest Honors Cagayan, Philippines

RESEARCH EXPERIENCE

Nuckolls Research Laboratory, Columbia Nano Initiative, *Research Assistant* *October 2022 – Present*
- Investigating organic nanoparticles (Macrocyclic Emeraldines) as channel material and fabricating synthetic molecular designs of organic electrochemical transistors (OECTs) for the advancement of biosensing technologies.

Weill Cornell Medicine COVID-19 Community Education & Empowerment Internship, *Intern* January 2022 - Present
- Presented capstone on infectious diseases research; spearheaded discussions with low-income communities around NYC to increase awareness and bridge information on vaccine and protein sciences, epidemiology, drug delivery, and virology.

Columbia Space Initiative - Space Microbiology Mission, *Researcher* *September 2022 – Present*
- Biology Subgroup: Conducting research on the effects of microgravity environments on ZnO nanoparticles and studying if microgravity alters or improves the microbicidal properties of these crystals
- BME Subgroup: Developing a 3D clinostat to provide an accurate simulation of exospheric atmosphere to study the mechanical changes of ZnO crystals in spaceflight environments

Columbia Summer Physics Research Program, *Research Program Participant* *June 2022 - August 2022*
- Presented research and related literature in this intensive summer program about the applications of quantum computing and quantum simulations in the energy sector. Delved into material sciences, particle physics, & complex energy processes research

Independent Engineering Research Projects, *Principal Investigator* *August 2017 – August 2022*
- Multipurpose Automated Greenhouse and Safety Keeping Agri-tech Device
  - Innovated a greenhouse that has atmospheric regulation; sensor-modulated soil moisture control; GSM notification; roof that opens/closes depending on precipitation levels; and a crop-drying facility
- Portable Maternal / Fetal Belt Monitor Equipped with Automated Notification System
  - Developed a proposal for a belt that can monitor maternal-fetal status and detect possible obstetrical health complications; sends SMS notifications and notifies patients through an alarm system
- Automated GSM-Based System for Fire Escape and Pyro – Mitigation
  - Created a robotic system that automatically unlocks the fire exit door and window, notifies the owner and the fire department, alarms the household, and triggers a water sprinkler when a fire is detected
- Electromagnetic Force and Human-Powered Electricity Generating Device
  - Developed a wearable device that utilizes 55MGOe Neodymium magnets, salvaged from old hard disc drives, to generate electricity by walking

LEADERSHIP AND WORK EXPERIENCE

EINS(pi)RE: Educational Non-Profit Organization, *Founder and Head Director* *February 2020 - Present*
- Created a non-profit that provides free STEM education to low-income indigenous students in the Philippines. Held weekly discussions, tutored, and gave resources to 500+ students. Improved STEM test scores by 95%

Students for Health Education, Access, and Literacy (S-HEAL), *Health Educator* *September 2022 – Present*
- Bridging disparities in health education and equity by spearheading classroom discussions with ~150 BIPOC low-income students in New York. Crafted comprehensive health curriculum and workshops for underfunded schools

Jumpstarting Aspiring Developers and Entrepreneurs Program (JADE), *Intern* *November 2022 - Present*
- Selected as 1 of top 20 undergrads to partake in immersion program with leading health & technology companies
- Had discussions with executives, venture capital investors, product managers, and software engineers. Learned Web Dev through HTML, CSS, Javascript, and Github and launched website.

CAUSE Philippines, *Mentorship Program Associate Director and Mentor* *August 2020 - Present*
- Nationwide non-profit organization that helps underprivileged Filipino students to pursue undergraduate education abroad. Helped 200+ students win ~19 million worth of scholarships from 90+ universities worldwide

Pupin Laboratories - Columbia Physics Department, *Administrative Assistant* *September 2022 – November 2022*
- Assisting office operations through document and data management, coordinated with Physics lab PIs and professors for administrative tasks, produced and dissemination of memos and flyers about Physics symposiums

SKILLS

Languages: Fluent (speaking and writing) in Filipino - Tagalog
Laboratory and Engineering Skills: nanofabrication cleanroom procedures, 3D printing, SolidWorks, laser cutting, soldering, physical vapor deposition, atomic force microscopy, data processing, SolidWorks