CHARLIE LI

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EDUCATION

Washington University in St. Louis | St. Louis, MO
B.S., Computer Science / Biology Second Major with Specialization in Genomics and Computational Biology / Chemistry Minor   Expected: May 2027
- **GPA:** 4.00/4.00
- **Honors:** Dean's List (Fall 23, Spring 24, Fall 24, Spring 25)
- **Relevant Coursework:** Geometric Computing for Biomedicine, AI for Chemistry, Biochemistry, Endocrinology, Algorithms & Data Structures, Software Development

RESEARCH EXPERIENCE

Losos Lab (Evolutionary Biology)
Research Assistant   Aug 2025 - Present
- Investigating the determinism of host-microbiome co-evolution using *Anolis* lizards as a model system
- Performing wet-lab extraction and sequencing of 16s rRNA genes from excrement samples
- Microbial taxonomic and functional diversity analysis utilizing bioinformatics tools including QIIME2 and PICRUSt2

Held Lab (Medical Oncology)
Research Assistant   Jan 2024 - May 2025
- **Protein Crypticity (CryptoCache Project)**
  1. Engineered a Python pipeline to analyze residue-scale solvent exposure dynamics across the entire Protein Data Bank (PDB).
  2. Correlated Crypticity with residue properties and post-translational modifications to characterize protein domains with distinct structural behaviors
- **Molecular Dynamics (GABA receptor)**
  1. Conducted mechanistic analysis of the redox opening of UNC-49 using GROMACS simulations.
  2. Performed trajectory manipulation and PCA feature extraction using MDAnalysis to characterize geometric and energetic landscape of receptor activation.

CLINICAL RESEARCH & EXPERIENCE

St. Louis Children's Hospital (PEMRAP)
Pediatric Emergency Medicine Research Associate   Jan 2025 - Aug 2025
- Screened emergency department track boards to identify eligible candidates for active clinical trials
- Recruited and consented over 300 patients and families for studies regarding resource availability
- Collaborated with PIs and physicians to ensure research protocol adhered to clinical workflows and ethics compliance

Barnes Jewish Hospital
ED Shadowing & Cardiovascular Volunteer   May 2024 - Aug 2025
- **Shadowing (Emergency Dept.):** Observed full cycle of emergency care, including triage, trauma stabilization, and discharge planning. Gained exposure to decision-making under high-pressure constraints and EHR utilization.
- **Volunteer (Cardiovascular Procedure Center):** Managed patient intake and discharge logistics; acted as a liaison between nursing staff and patient families to stream communication during procedures.

LEADERSHIP & SERVICE

WashU Stem Education Association
Co-Chair, Question Writing Committee   Aug 2023 - Present
- Lead a committee of 10 students to craft original, high-level chemistry problems for an annual national high school competition.
- Manage weekly workflow, peer-review cycles, and grading logistics.

World Bird Sanctuary
- Provided husbandry and rehabilitation care for injured birds of prey, demonstrating attention to detail and long-term commitment to organismal biology.
- Educated public visitors on raptor conservation and biology.

SKILLS

- **Programming:** Python, R, C/C++, Java, SQL, Mathematica
- **Web Development:** HTML/CSS/JavaScript (Typescript), PHP, React, Flask, MongoDB
- **Packages & Tools:** MDAnalysis, scikit-learn, PyTorch, PyMOL, QIIME2, PICRUSt2
- **Laboratory Techniques:** PCR, Gel Electrophoresis, DNA Extraction, Titration, Chromatography
- **Languages:** Chinese (Native), English (Fluent)