

# YUXIN PENG

Phone: +1(641)510-3229 ◊ Email: pengyu@oregonstate.edu

Homepage: kevinpyx.github.io



## RESEARCH INTERESTS

---

Neural encoding and decoding; Closed-loop BCIs; 3D reconstruction and scene understanding.

## EDUCATION

---

### Grinnell College

Dec 2024

Bachelor of Arts, Computer Science (with honors)

GPA: 3.99/4.0

*Related courses: Computer Vision, Mathematical Programming, Graph Theory, Linear Algebra.*

## TECHNICAL SKILLS

---

### Programming Languages

Python, C/C++, MATLAB, Julia, HTML/CSS, Bash, Java, Dart

### Machine Learning Tools

Pytorch, Numpy, matplotlib, Weight and Biases, Open3D

### General

Vim, Git, Linux, L<sup>A</sup>T<sub>E</sub>X

## RESEARCH EXPERIENCE

---

### Scalable 3D Open-Vocabulary Learning with 2D Supervision

May 2025 - Present

*Supervisors: Dr. Fuxin Li and Dr. Stefan Lee*

Oregon State University

- Proposed a scalable labeling method using 2D VLMs and foundation models to generate pseudo-annotations for 3D VLM training.
- Leading the development of the 3D open-vocabulary VLM framework capable of open-vocabulary native 3D semantic/instance segmentation and visual-language grounding.
- Built a fully distributed training pipeline for large-scale 3D VLM experiments.

### 9-DoF Box Detection from Monocular RGB-D Images

Feb 2025 - April 2025

*Supervisor: Dr. Chanh Kim*

Oregon State University

- Proposed a 9-DoF 3D object detection framework that estimates full object orientation from partial point clouds.
- Implemented data loaders and data augmentation pipelines.
- Collected real-world monocular RGB-D test data.
- Improved model's qualitative real-world performance considerably.

### Quantifying Gerrymandering

May 2024 - Jan 2025

*Supervisor: Dr. Eric Autry*

Grinnell College

- Designed and executed experiments to compare the performance of two algorithms for sampling random spanning trees on weighted graphs (Russo's algorithm & Wilson's algorithm).
- Analyzed their mixing time under different graph topologies and demonstrated Russo's algorithm mixes faster.
- Implemented Russo's algorithm within a Metropolis–Hastings framework to improve efficiency of generating fair redistricting plans.

## Benchmarking ANNS Algorithms

*Supervisor: Dr. Seung-Hwan Lim*

Jun 2023 - Aug 2023

Oak Ridge National Laboratory

- Designed and executed experiments to benchmark the performance of different types of billion-scale approximate nearest neighbor search algorithms.
- Evaluated performance trade-offs of the algorithms in terms of speed, memory usage, and recall.

## WORK EXPERIENCE

---

### Puti Intelligence Inc

*Research Scientist Intern*

July 2025 - Present

Portland, OR

- Deploying an open-vocabulary 3D vision-language model onto mobile robotic agents for real-world tasks.

### Oregon State University

*Research Assistant*

February 2025 - Present

Corvallis, OR

- Conducting research on projects pertaining to 3D computer vision with applications in robotics.

## PRESENTATIONS

---

### Joint Mathematics Meetings

Chong Zhao, **Yuxin Peng**, Eric Autry

*A Performance Study on Russo's Algorithm: Sampling Random Spanning Trees in Weighted Graphs*

January 2025

Seattle, WA

### Oak Ridge National Laboratory (PCIP Symposium)

**Yuxin Peng**, Seung-Hwan Lim

*Benchmarking ANNS Algorithms: Performance Analysis And Evaluation*

August 2023

Oak Ridge, TN

## TEACHING EXPERIENCE

---

**CSC301** Analysis of Algorithms

*Fall 2024*

**CSC208** Discrete Structures

*Spring 2024*

**CSC207** Object-Oriented Problem Solving, Data Structures, and Algorithms

*Fall 2022*


**PHY131** General Physics I

*Fall 2021*

## SOFTWARE DEVELOPMENT

---

### GrinSync

 <https://github.com/GrinSync>

*Jan 2024 - October 2024*

Grinnell, IA

Developed a mobile app to promote campus event involvement as lead front end developer in a team of 6 using Flutter with Dart.

## HONORS AND AWARDS

---

Dean's list

Grinnell College

Graduated with Honors in Computer Science

Grinnell College

## OTHER SKILLS

---

**Languages** English (professional), Mandarin (native), Japanese (intermediate), Spanish, Hungarian (beginner)