

Ethan Lee Copple

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Systems Thinker | Engineer & Anthropologist | Human & Technical Insights for Complex Systems Intervention

Doctoral Candidate in Industrial Engineering specializing in human-technical systems analysis and engineering management, seeking opportunities in supply chain, operations, and industrial strategy for Fall 2025.

Education and Skills

Oregon State University (OSU): Expected Ph.D. Graduation Fall 2025 | GPA: 3.9

- o **Ph.D. Candidate Industrial Engineering**
- o **M.S. Industrial Engineering and Applied Anthropology** (Fall 2023)

Kansas State University (KSU): Fall 2016 to Spring 2021 | GPA: 3.96

- o B.S. Industrial and Manufacturing Systems Engineering (IMSE) and B.S. Anthropology
- o Study Abroad: Valencia, Spain at Universitat Politècnica de València (Spring 2019)

Major Awards:

- o **NSF Graduate Research Fellow** (2022),
- o **American Legion National Eagle Scout of the Year** (2015),
- o **Evans Family Humanitarian Engineering Fellow** (2021, 2022),
- o **Tau Beta Pi Engineering Underclassman of the Year KSU** (2017-2018),
- o **National Eagle Scout Association World Explorer – Cradle of Humankind** (2016),
- o **SIMIO Student Competition Semi-Finalist** (2020),
- o **1st IISE SC Region Conf. Paper Competition** (2021)

Engineering Skills: Transdisciplinary Research Design | Systems Thinking (Critical Systems Thinking, Purposeful Human Activity Systems, Cybernetics) | Quantitative Modeling, Analysis, and Visualization | Network Analysis, Graph Theory, and Structural Complexity Metrics | Operations Research | Decision Support Systems | Intermediate CPLEX, Gourbi, Python Programming | SIMIO | Six Sigma White Belt

Anthropological Skills: Proficient Spanish (Argentine and Spanish Regional Specialties) | Ethnographic Interviewing & Fieldwork | Participant Observation | NVIVO, Atlas.ti and Hand Coding | Literature Review | Human-Technical Systems Design | Multi-Stakeholder Systems Design | Policy & Institutional Analysis | Grounded Theory & Inductive Research Approaches | ArcGIS & QGIS, Tableau | Video Production | Grant Writing

Research Experience

Dissertation Research: Systems Approaches to Identify Barriers and Enablers to Healthcare Delivery

- **Case Study:** Healthcare Delivery in the Province of Buenos Aires, Argentina
- **Field Visit in Winter 2024-5:** Conducted 150+ interviews with providers and patients in multisite rapid ethnography.
- Developed a transdisciplinary systems approach integrating engineering and social sciences to analyze complex, human-technical systems and optimize intervention planning.
- Designed and implemented a novel metrics to quantify the changeability and complexities of systemic to guide strategic decision-making in operations, logistics, and supply chain management.
- Conducted network analysis and modeling to identify key leverage points for improving system efficiency and reducing barriers to healthcare delivery.

Thesis Research: Barriers and Enablers to Healthcare Access, Buenos Aires, Argentina

(Fall 2021-Fall 2023)

- Exploratory Holistic Systems Science and Applied Anthropology Approach.
- Field Visit in summer 2021: Conducted 75+ interviews with providers and patients over 2 months in multisite rapid ethnography.
- Transcribed verbal fieldnotes, analyzed in NVIVO to inform human activity conceptual model and network complexity.

Graduate Research Assistant, Human-in-the-Loop Fairness in Machine Learning, OSU

(Summer 2021-Fall 2023)

- NSF EAGER Project to study human-in-the-loop artificial intelligence (AI) and algorithmic fairness in machine learning (ML)
- Co-authored peer-reviewed paper (*in review*), translating complex AI ethics concepts for technical and nontechnical audiences.
- Led international focus groups, survey recruitment, and analysis, to integrate user feedback into AI ethics research, bridging machine learning and social science perspectives.

Qualitative Research Assistant, Purdue RED Lab

(Summer 2021-Fall 2021)

- Used NVIVO to qualitatively code interviews, created quantitatively-backed graphics, and assisted writing paper for the International Journal for Engineering Education, examining the impacts of COVID-19 on engineering higher education.

Research Assistant, Wildland Firefighter Fatality Blame, Dr. Trevor Durbin

(Spring 2020- Fall 2020)

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Research Interests: Systems thinking and complexity analysis, Quantitative modeling and metrics, Network analysis and structural complexity, Transdisciplinary methodologies integrating engineering and social sciences

Professional Experience

Supply Chain and Scaling Analyst, Stealth Mode Startup (Winter 2025-Current)

- Leading a comprehensive site analysis for first expansion, evaluating physical, social, and political ecologies to assess feasibility.
- Developing an integrated market entry strategy, synthesizing economic forces, regulatory landscapes, and logistical challenges to navigate local, state, and federal policies and ensure a strategic, compliant expansion.

National Science Foundation Graduate Research Fellow, Oregon State University (Fall 2022-Current)

Graduate Research Assistant, Human-in-the-Loop Fairness in Machine Learning (Fall 2021-Fall 2023)

Graduate Teaching Assistant, Engineering for Global Development, OSU (Fall 2021)

Teaching Assistant, Introduction to Cultural Anthropology, KSU (Spring 2019, Fall 2019, Fall 2020)

Supply Chain Analyst, Electromech Technologies (Summer 2020)

- Implemented QR scanned lot tracking system resulting in \$24K direct (2.7% department labor costs) and \$101K indirect reduced costs, decreased recall risks, and created opportunity for >\$1.3M increased yearly sales.
- Modeled improved factory layout and material flow, reducing walking distances for key product lines by ~35%, freed ~13% of factory workspace.

Special Projects Associate, EnVisage Consulting (Summer 2018)

- Led process improvement initiative for Department of Homeland Security Grants to improve data collection.

Publications, Conferences, and Lectures

Publications:

- *(In Review) (First Author) Development of a Systems-Informed Methodology for a Systems and Anthropological Examination of Healthcare Delivery Improvement* with Dr. Javier Calvo-Amodio, Dr. Shaozeng Zhang | *Systems Research and Behavioral Science*
- *(In Review) (First Author) Return AI to Human Control: Developing A Machine Learning Framework for User-Operable Algorithms* with Dr. Shaozeng Zhang, Dr. Fuxin Li, Ali Behnoudfar, Ana Carolina de Assís Nunes | *AI and Ethics*
- **The Missing Study Groups: Liminality and Communitas in the Time of COVID-19** with Dr. Elizabeth Briody Dr. Fredy Rodriguez, Dr. Edward Berger | *Annals of Anthropological Practice*
- **Integrating Systemic and Applied Anthropology Approaches to Identify Barriers and Enablers to Accessing Healthcare in the Province of Buenos Aires, Argentina** | Master's Thesis in ScholarsArchive@OSU at Oregon State University
- **Catholic Infrastructures and Inquiries of Digital Technologies and the Church**
- **The Intersection of Big Data and Anthropology** | Published in K-Rex (Kansas State Research Exchange) (Kirmser Undergraduate Research Award Honorable Mention)

Conferences:

- **Can Applied Anthropology Revitalize the Discipline?** | Panel Presentation at the Society of Applied Anthropology Annual Meeting (March 2025)
- **Systems Approaches to Identify Barriers and Enablers to Healthcare Delivery** | Conference Paper Presentation at American Society for Engineering Management (October 2024)
- **Integrating Systemic and Applied Anthropology Approaches to Identify Barriers and Enablers to Accessing Healthcare** | Conference Paper Presentation at American Society for Engineering Management (October 2023)
- **Integrating Anthropology and Industrial Engineering: A Holistic Approach to Healthcare Access Understanding and Improvement** | Conference Paper Presentation at Society of Applied Anthropology (March 2023)
- **Collaboration Of Anthropologists And Computer Scientists In Artificial Intelligence Design** | Conference Panel Facilitator and Member at American Anthropological Association Annual Conference (November 2022)
- **On Catholic Infrastructure** | Conference Paper Presentation at Society of Applied Anthropology (March 2022)
- **Rural Healthcare Access in Joyabaj, Guatemala: A Methodological Inquiry to the Value of Mixed Operations Research and Anthropological Studies** | Institute of Industrial and Systems Engineers (IISE) Student Conference Paper Competition (1st Place Award SC Region Conference March 2021 and International Conference in May 2021)

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Guest Lectures:

- **Systems Thinking and Approaches to Supply Chain from Healthcare Delivery Research** | Guest Lecture, KSU Facilities Layout & Design Course (April 2025)
- **The Human and the Technical: Systems Approaches and Healthcare Delivery** | Guest Graduate Seminar at KSU (October 2024)
- **Practicing anthropology: stories about the collaboration between computer scientists and anthropologists in artificial intelligence design** | Anthropology Tan Sack Series, OSU with Ana Carolina de Assis Nunes (November 2022)
- **The Reality of Problem Definition and Applying Learnings to an Internship** | Guest Lecture, KSU Facilities Layout & Design Course with Mauricio de la Serna (March 2021)
- **Narrative Creation and Skill Building: A Different Approach to Undergraduate Studies** | KSU Initiation to Anthropology and Practicing Anthropology Courses (March 2021, April 2021)
- **Research Rural Healthcare in Joyabaj, Guatemala** | KSU Medical Anthropology (May 2018)

Fellowships and Awards

National Science Foundation Graduate Research Fellow

(Fall 2022-Current)

- Received National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP) Offer to fund continued graduate studies and research valued at \$186,000.

Evans Family Graduate Fellow in Humanitarian Engineering, Buenos Aires, Argentina

(Fall 2021, Winter 2022)

- Received \$11,000 in total fellowship funding to support integrated anthropology and engineering fieldwork

Chapman Scholars Program: Researching Rural Health Care: Joyabaj, Quiché, Guatemala

(Summer 2018- Spring 2020)

- **Research Lead** - Led a research expedition to gather statistical and qualitative information including videoing 9+ hours of interviews, conducting 50+ semi-structured, ethnographic interviews.
- Independent Study (Spring 2020) – Completed statistical analysis of health data, plotted health statistics on GIS software, and created optimization model of health worker distribution with flex variable, population variables, and location data.

Collegiate Experience and Projects

Society for Applied Anthropology (SfAA)

(Spring 2022-Spring 2024)

- **Student Committee Member** – Student Endowed Award Committee Member and advised SfAA Board of Directors

Oregon State Newman Center: Catholic Campus Ministry

(Fall 2021-Fall 2023)

- **Executive Committee** (Fall 2021-Current) – Directed new student outreach for missionaries and student leaders.
- **Greek Ministry Team** (Fall 2021-Spring 2022)

Alpha Pi Mu (Industrial Engineering Honors Society): OSU and KSU

(Spring 2020-Current)

- **Vice President** – (Winter 2023-Winter 2024) – Oregon State University
- **Secretary** – (Spring 2020-Spring 2021) - Kansas State University

Field Assistant (Summer 2018) - Worked with EWB Regional Coordinator to evaluate possible school projects and collaborated with

Ferrer Revitalization Project (FPR) Research

(Spring 2018-Current)

- **Founder** - Conducted ethnographic and participant observation-based fieldwork in Dodge City, KS, Valencia, Spain, and Joyabaj, Guatemala to understand contemporary Catholic trends and recommend improved enactment of Catholic Social Teaching.
- Directed multilingual narrative interviews about working conditions and worker exploitation to direct social causes.

COVID-19 Response Projects

(Spring 2020-Spring 2021)

- **COVID-19 Clinic Improvement** (Spring 2021) – Team Leader for IMSE Senior Design. Serving 35k+ from Riley County, KS. Advised Public Health Department on systems improvement and throughput increases.
- **COVID-19 Testing Facility Planning** (Spring 2020) - Designed covered drive-thru testing for Riley County, KS.

Engineers Without Borders KSU Chapter: Guatemala International Team

(Spring 2017-Fall 2020)

- **Advisor** (Fall 2019-Fall 2020) - Advised International Project Team in kitchen project design, travel, and in-country resources. Worked with leadership to identify and understand partner desires and project limitations.
- **International Team Leader** (Spring 2017-Fall 2018) - Elected to lead interdisciplinary International Team (15+) in design development, trip planning, and project assessment for sanitation system and retaining wall.
- **Field Assistant** (Summer 2018) - Worked with EWB Regional Coordinator to evaluate possible school projects and collaborated with community stakeholders and in-country teams to assess future school buildings.
- **Assessment and Planning, Monitoring, Evaluation, & Learning (PMEL) Travel Team Leader** (January 2018)

Other Interests: Trekking, Watercolor Painting, Ballroom Dancing, Barefoot Running, Aviation, Mountaineering, & Kayaking