

YUTARO SHIMIZU

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RESEARCH EXPERIENCE

Santa Fe Institute | Santa Fe, New Mexico

Undergraduate Complexity Researcher, Foundations of Intelligence, June 2022 – August 2022

- Developed theoretical ecology simulation using latest spatial biodiversity concepts (host-parasite coevolution, patch fragmentation and $\alpha\beta\gamma$ diversities); Supervisor: Melanie Mitchell
- Quantified evolution of algorithm solutions with Information Theory (relative entropy and cosine similarity)

Shinshu University | Nagano, Japan

Research Assistant, Forest Ecology Department, July 2021 – January 2022

- Developed high-resolution GIS web app using Landsat images to track microclimate of volcanic forests
- Conducted terrestrial ecology fieldwork for biodiversity and global change studies in 5 sub-Alpine forests
- Led publication about biomass allocation of young *Fagus crenata* using scaling theory (in review)
- Sampled 1,000 wood cores from Japanese thatched house for traditional ecological knowledge studies

Ewha Women's University | Seoul, South Korea

Research Assistant, Laboratory of Behavioral Ecology, January 2021 – April 2021

- Conducted fieldwork to collect 100 newly discovered Korean native frog species *Rana huarensis*
 - Lead literature review on genetics, morphology and acoustic behavior *Rana huarensis* for sample collection
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EDUCATION

Minerva University | San Francisco, California

Bachelor of Science, College of Natural Sciences, May 2023

- Cumulative GPA: 3.39/4.00; Concentration: Organisms and Earth System; Acceptance rate: 1.2%
- Courses: Ecology, Biology, Geology, Remote sensing, Atmospheric Chemistry & Software Engineering
- Replicated causal inference about effect of Congolese Civil War on forest cover; Supervisor: Alexis Diamond
- Simulated 100 year impact of San Francisco's Sea Level Rise on native endangered bird's population
- Analyzed socio-ecological role of urban gardens in Buenos Aires. Delivered executive summary to board.
- Lived and studied in 7 cities over 4 years (San Francisco, Seoul, Tokyo, London, Berlin, Buenos Aires, Taipei)

UWC ISAK Japan | Nagano, Japan

International Baccalaureate Diploma, 40/45 IB points, June 2019

- Founded 30 hectare forest conservation non-profit with state office and local residents (150+ participants)
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RESEARCH PRESENTATION

- “Genetic Algorithm: Ecology, Computation and Information Theory: SFI UCR Progress Talk.” Using host-parasite macroecological lens, Genetic Algorithm can be reprogrammed for novel searches
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SKILLS AND INTERESTS

- **Technical Skills:** Python, R, ArcGIS, Git & Causal Inference (intermediate); SQL (elementary)
- **Personal Interests:** scientific illustration, drawing, filmmaking, reading, cooking, surfing, hiking, dance
- **Languages:** English and Japanese (native); Korean, Mandarin & Russian (conversational)