

# Young Jun Lee

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## EDUCATION & AWARDS

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**Intelligent Earth: UKRI Centre for Doctoral Training in AI for the Environment,** 2025 – Present  
**University of Oxford, Oxford, UK**

- Fully funded doctoral programme focusing on the application of artificial intelligence (AI) to address the climate and biodiversity crises and environmental solutions for natural and human systems
- Currently interested in utilising fundamental machine learning frameworks to develop informative ecological models that are easily interpretable and tractable for use in conservation and ecosystem management

**MBiol Biology, Christ Church, University of Oxford, Oxford, UK** 2021 – Present

- Achieved First in the 2<sup>nd</sup>/3<sup>rd</sup> year Examinations with an overall grade of 74%
- Awarded the **Gibbs Proxime Prize** for ranking 3<sup>rd</sup> in the cohort of ~110 students
- Currently developing a Master's project titled "Modelling the impact of stage-dependent competition on coexistence in a herbaceous plant community" at the SalGo Lab under the supervision of Dr Roberto Salguero-Gómez and Dr Christina Hernández

**Presidential Science Scholarship, Korean Student Aid Foundation** 2021 – Present

- Awarded a competitive governmental scholarship supporting 50,000 USD per annum throughout the course for undergraduate students studying science subjects abroad
- Selected as one of 20 scholars among nation-wide applicants for excellence in academic performance and enthusiasm to contribute to research in biology and society

## POSTER & PUBLICATION

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**2024** **Poster:** Lee, Y. J., Sosef, M., Lucas, E., Ung, V., Gill, K., & Nicolson, N. (2024). *Automated trait extraction from unstructured species descriptions for species ID: A pilot study using a large language model*. <https://doi.org/10.5281/ZENODO.13691936>

**2023** **Publication:** Gascoigne, S. J. L., Rolph, S., Sankey, D., Nidadavolu, N., Stell Pičman, A. S., Hernández, C. M., Philpott, M. E. R., Salam, A., Bernard, C., Fenollosa, E., **Lee, Y. J.**, McLean, J., Hetti Achchige Perera, S., Spacey, O. G., Kajin, M., Vinton, A. C., Archer, C. R., Burns, J. H., Buss, D. L., ... Salguero-Gómez, R. (2023). *A standard protocol to report discrete stage-structured demographic information*. *Methods in Ecology and Evolution*, 14(8), 2065–2083. <https://doi.org/10.1111/2041-210X.14164>

## PRESENTATIONS

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- 2024** Lee, Y. J., Christina, H., Ray, C. A., Blonder, B. W., & Salguero-Gómez, R. (2024, December 12). *Modelling the impact of stage-dependent competition on plant community dynamics* [In-person poster presentation]. British Ecological Society Annual Meeting, Liverpool, UK.
- Lee, Y. J., Hernández, C., Ray, C. A., Blonder, B. W., & Salguero-Gómez, R. (2024, November 13). *Pick on someone your own size? Using plant demography to understand competition & coexistence* [In-person workshop presentation]. Tangled Bank Workshop, St Andrews Botanic Garden, St Andrews, UK.
- Lee, Y. J., Hernández, C., & Salguero-Gómez, R. (2024, July 31). *Modelling the impact of stage-dependence on two-species competitive dynamics* [Online conference presentation]. Evolutionary Demography Society 9th annual meeting, National Autonomous University of Mexico, Mexico City, Mexico.
- Lee, Y. J. (2024, July 14). *Small green things – learning to love mosses and liverworts* [In-person public presentation]. Oxford University Museum of Natural History Water and Wildlife Activity Day, Oxford University Botanic Garden, Oxford, UK
- 2016** Lee, Y. J. (2016, April 27). *Don't Forget Me: An app that never lets you forget your plants* [In-person conference presentation]. Samsung Developer Conference, San Francisco, USA.

## RESEARCH POSITIONS & INTERNSHIPS

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- SalGo Team, University of Oxford, Paid Research Assistant** Jul 2024 – Sep 2024
- Developed custom UI and web server for an expert survey web app gathering the estimated impact of threats on the vital rates of vulnerable species
  - Co-designed survey structure & questions to ensure accurate and efficient collection of data
- Royal Botanic Gardens, Kew, Summer Science Intern** Jul 2024 – Aug 2024
- Developed a novel open-source tool for extracting categorical and numerical plant trait data from unstructured species descriptions using large language models
  - Shared results with the World Flora Online Taxonomic Working Group
  - Lead authorship of a poster summarising the work (Lee et al., 2024)
- MicroLab@Bristol, University of Bristol, Remote Research Assistant** Mar 2023 – May 2023
- Analysed transcriptomic sequence data of supraglacial algae to construct species phylogeny within Viridiplantae and gene trees as part of the iDAPT project investigating early land plant evolution
  - Conducted independent exploratory analyses to investigate gene family expansion in bryophytes vs. tracheophytes
- SalGo Team, University of Oxford, Paid Research Assistant** Dec 2022 – Jan 2023
- Digitised and built matrix population models (MPM) using demographic data from ecological research articles for the COMPADRE/COMADRE MPM database
  - Co-authorship in a research article on Methods in Ecology and Evolution (Gascoigne et al., 2023) for significant contribution to the database and review during the editing process

## SOCIETIES, PUBLIC ENGAGEMENT & VOLUNTEERING

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**Oxford University Nature Conservation Society, Treasurer & Vice-president** Jul 2024 – Jun 2025  
**President** Jul 2023 – Jun 2024  
**Social Media & IT Officer** Apr 2022 – Jun 2023

- Managed the society's social media account with ~500 followers, promoting weekly events such as expert talks and practical conservation activities with graphics as Social Media & IT Officer
- Organised 7 expert talks and co-hosted practical conservation activities in collaboration with local community groups as President
- Maintaining the society's finances, assisting in event organisation, and supporting student members' career development in conservation as Treasurer & Vice-president

**St Andrews Botanic Garden, Invited Speaker** Nov 2024

- Invited to speak at an initial workshop for the Tangled Bank project at St Andrews Botanic Garden, which aims to research changes in urban temperate ecosystems and support decision-making in conservation and restoration
- Introduced plant demography and master's research modelling stage-dependent plant competition to an audience of diverse expertise including ecologists, policymakers, farmers, landscape designers, and artists
- Discussed the relevance of the present master's research on the project and attendees' work

**Oxford University Museum of Natural History, Speaker & Event Assistant** Jul 2024

- Assisted in the public engagement event 'Water and Wildlife Activity Day' (17 Jul 2024) run by the Oxford University Museum of Natural History and hosted at the Oxford University Botanic Garden
- Guided members of the public in using iNaturalist to survey animals and plants in a BioBlitz
- Delivered an open public talk on the biology and conservation of bryophytes

**The Earthly, Article Illustrator** Aug 2022 – Oct 2023

- Illustrating articles for the Earthly, a student-run journal publishing educational, solution-focused stories on climate change
- Created visual illustrations to effectively communicate a wide range of topical areas including natural capital, ocean acidification, permafrost melting, and decarbonisation

**University of Oxford Herbaria, Specimen Handling Volunteer** Mar 2022 – Apr 2022

- Volunteered weekly during term time, organising and digitising incoming specimens
- Gained first-hand knowledge in plant taxonomy and ecology, exploring the importance of herbarium specimens for research in population genetics and conservation biology

**British Bryological Society, Species Recording** Mar 2022

- Attended the 2022 British Bryological Society's spring field meeting (26 Mar 2022 – 2 Apr 2022) in Cornwall as a society member, contributing to systematic bryophyte surveys
- Gained skill in ecological surveying and knowledge in bryophyte identification, taxonomy and ecology through hands-on experience

## COMPUTING & LANGUAGE SKILLS

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**Artificial intelligence:** Experience utilising large language models for data extraction from unstructured text using Python libraries Ollama and LangChain; Working knowledge using shared high-performance computing resources; Conducted a mini-research project using random forests to predict forest cover from environmental variables; Learned the fundamentals of neural networks through self-study

**Data analysis:** Proficiency in data analysis and visualisation using Python and R; Knowledge of phylogenetic analysis using bioinformatics tools including MAFFT, TrimAl, IQTree, and ASTRAL

**Languages:** English – Professional fluency (Overall IELTS band score 8.5 in 2020); Korean – Native speaker