Minki Phillip Lee

CONTACT INFORMATION

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EDUCATION

University of Michigan, Ann Arbor, MI — Sep 2023 – Dec 2024 (expected)

Master of Science, Mathematics (Applied Math Track)

Advisor: Daniel B. Forger

University of Michigan, Ann Arbor, MI — Sep 2020 – Dec 2024 (expected)

Bachelor of Science, Honors Mathematics

RESEARCH INTERESTS

Mathematical and computational biology, Bioinformatics, Computational psychiatry, Circadian rhythms, Sleep, Wearables, Nonlinear dynamics, Stochastic processes, Topological data analysis

HONORS AND AWARDS

2024 Best Poster Presentation Award	Society for Mathematical Biology
2024 Rackham International Travel Grant	University of Michigan
2024 Outstanding Achievement in Mathematics Award	University of Michigan
2023 Barry M. Goldwater Scholarship	**Goldwater Foundation**
2023 Wilfred Kaplan Award in Applied Mathematics	University of Michigan
2020-2024 Department of Mathematics Merit Scholarship	University of Michigan
2020 Andrew J. Lum & David R. Juillet Scholarship	Ann Arbor Community Foundation

PUBLICATIONS

$*$: co-first author, † : co-corresponding author

Mayer C*, Kim DW*, Zhang M, **Lee MP**, Forger DB, Burgess HJ, Moon C†, Predicting circadian phase in community-dwelling later-life adults using wearable data from a wrist-worn device, *J. Sleep Res.* (Accepted).

Lee MP*, Kim DW*,†, Fang Y, Kim R, Bohnert ASB, Sen S, Forger DB†, The real-world association between digital markers of circadian disruption and mental health risks, *npj Digit. Med.* (Accepted).

Lee MP*, Kim DW*,†, Mayer C, Walch O, Forger DB, The combination of topological data analysis and mathematical modeling improves sleep stage prediction from consumer-grade wearables, *J. Biol. Rhythms* (2024).

Kim DW*, **Lee MP***, Forger DB†, Wearable data assimilation to estimate the circadian phase, *SIAM J. Appl Math* (2023).

Lee MP*, Hoang K*, Park S, Song YM, Joo EY, Chang W†, Kim JH†, Kim JK†, Imputing missing sleep data from wearables with neural network in real-world settings, *Sleep* (2023).

Kim DW*,†, Mayer C*, **Lee MP**, Choi SW, Tewari M, Forger DB, Efficient assessment of real-world dynamics of circadian rhythms in heart rate and body temperature from wearable data, *J. R. Soc. Interface* (2023).

PREPRINTS/IN PREPARATION

Kim R*, Fang Y, **Lee MP**, Kim DW, Tang Z, Sen S, Forger DB†, Real-world associations between SLC20A2 polymorphisms and seasonal variation in activity and circadian rhythms, *Submitted.*

Lee MP*, Kim DW*,†, Moment closure approximation-based Kalman filter for biochemical systems, *In preparation.*

PRESENTATION

2024 Society for Mathematical Biology Annual Meeting, Poster, Seoul, South Korea

2024 Society for Research on Biological Rhythms Biennial Meeting, Poster, San Juan, Puerto Rico

2023 SIAM Great Lakes Section Annual Meeting, Contributed talk, Lansing, MI, USA

2022 SIAM Great Lakes Section Annual Meeting, Minisymposium, Detroit, MI, USA

2022 IBS Biomedical Mathematics Seminar, Daejeon, South Korea

2022 Annual Conference of Korean Society for Industrial and Applied Mathematics, Poster, Daejeon, South Korea

2021 University of Michigan Mathematics REU Seminar, Virtual

Other Experiences

President May 2022 – May 2023

Korean International Student Association (KISA)

Grader Sep 2022 – May 2024

Math 555 *Complex Analysis with Applications*, University of Michigan

Math 425 *Introduction to Probability*, University of Michigan

Mathematics Tutor Sep 2020 – *present*

Lime Tutoring, Ann Arbor, MI

Medical Assistant July 2023 – *present*

HelloMed Walk-in Clinic, Ann Arbor, MI

Volunteer Jan 2024 – *present*

Heartland Hospice, Ann Arbor, MI

Clarinet Player Sep 2023 – Apr 2024

Ann Arbor Concert Band