

# CURRICULUM VITAE

Sunwoo Lim | swlimm@yonsei.ac.kr | sites.google.com/view/sunwoolim | LinkedIn | Statistics Ph.D

## FIELDS OF INTERESTS

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Bayesian nonparametrics, High dimensional statistics, Minimax theory, Spatial statistics, Optimization

## EDUCATION

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### Yonsei University

Master of Arts in Statistics and Data Science (Degree expected in Feb 2024)

Thesis: Synergizing Roughness Penalization and Basis Selection in Bayesian Spline Regression

GPA: 4.23/4.30 (**4.00/4.00**)

**Mar 2022 – Present**

Seoul, Republic of Korea

### Yonsei University

Bachelor of Arts in Applied Statistics

Math & Stat & CS GPA: 4.19/4.30 (**3.98/4.00**) Overall GPA: 4.11/4.30 (**3.93/4.00**)

**Mar 2015 – Feb 2022**

Seoul, Republic of Korea

### University of California, Berkeley (UC Berkeley)

Exchange Student Program, Statistics

GPA: **4.00/4.00**

**Jan 2020 – Dec 2020**

California, USA

### Leave of Absence

Republic of Korea Air Force Operations Command, Flutist in Military Band

**Apr 2017 – Apr 2019**

Seoul, Republic of Korea

## AWARDS AND HONORS

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Brain Korea 21 Scholarships, National Research Foundation of Korea

Honors, Yonsei University

Excellent Undergraduate Tutor Award, Yonsei University

Mar 2022 – Present

Fall 2019, Fall 2021

Fall 2019

## PUBLICATIONS AND WORKING PAPERS

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**Lim S.** & Jeong S. Synergizing Roughness Penalization and Basis Selection in Bayesian Spline Regression.

**Lim S.** & Jeong S. Bayesian Nonparametric Regression on a Complex Spatial Domain via Triangulation.

Woo, H., **Lim, S. W.**, & Sohn, S. Y. (2021). Recommending blue ocean technologies for subcontractors: A framework based on business reports of prime contractors and patents. **PloS one**, 16(8), e0256157. [[Html](#)]

## RESEARCH EXPERIENCE

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### Yonsei University

Research Assistant for Dr. Seonghyun Jeong

**Mar 2022 – Present**

- *First author of working paper* proposing a new prior distribution that synergizes  $l^2$  norm penalization and basis selection in *Bayesian nonparametric function estimation* task
- Proved adaptive posterior contraction rate (Bayesian analog to convergence rate) of the method in minimax sense
- Devised an *efficient blocked Gibbs sampler* to draw samples from the Bayesian model averaged posterior

### Yonsei University

Undergraduate Internship for Dr. Won-Yong Shin

**Jan 2021 – Jul 2021**

- Research on *network embedding*, an unsupervised deep learning tool to extract latent features in network models
- Group study on theories and computations of natural language processing and network models

### Yonsei University

Undergraduate Internship for Dr. So-Young Sohn

**May 2020 – Dec 2020**

- *Second author* of paper on *recommending blue ocean technologies* to subcontractors related to their prime contractors
- An application study based on *Linear Programming (LP)*
- Conducted data processing, programming and advanced the methodology with the first author Hyunwoo Woo.

## PRESENTATIONS

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Sun Woo Lim, and Seonghyun Jeong. "Synergizing Roughness Penalization and Basis Selection in Bayesian Spline Regression." 2023 Winter the Korean Statistical Society Conference. Dec 1, 2023 (Expected). Sungshin Women's University, Seoul, Republic of Korea

Sun Woo Lim, and Seonghyun Jeong. "Bayesian Nonparametric Regression on a Complex Spatial Domain via Triangulation". 2022 Brain Korea Academic Conference. August 24, 2022. Yonsei University, Seoul, Republic of Korea (Oral)

## TEACHING EXPERIENCES

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### Yonsei University

Sep 2022 – Present

Teaching Assistant for Dr. Seonghyun Jeong

- Statistical Computing (Undergraduate, Fall 2022, Fall 2023)
- Deep Learning with Python (Institute of Data Science, Apr, Sep 2023)
- Bayesian Analysis with Stan (The Korean Statistical Society summer school, Aug 2022)

### Yonsei University

Mar 2023 – Jun 2023

Teaching Assistant for Introduction to Statistics (Undergraduate, Spring 2023)

### Yonsei University

Sep 2019 – Dec 2019

Undergraduate Tutor for Mathematical Statistics I (Undergraduate, Fall 2019)

## PROJECTS AND EXTRACURRICULAR ACTIVITIES

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### Algorithms and Applications

Mar 2021 – Jun 2021

Individual Project in Graduate Course

Instructor: Dr. Wonyong Shin, Yonsei Univ.

- Built computationally efficient algorithm for *optimal allocation problem*, converting into integer programming [pdf]
- Applicable to wide range of real-life situations (e.g, time management to maximize efficiency, portfolio optimization)
- Applicable to various optimization problem types (Linear Programming, Quadratic Programming, etc)

### Yonsei Essential Statistics Club (ESC)

Mar 2020 – Jun 2021

Graduate Student Advisor, Project Team Member

Advisor: Dr. Jaewoo Park, Yonsei Univ.

- Advised on *deep learning theories* and *Bayesian nonparametrics* and provided weekly session feedbacks
- Won the team project contest for modeling and explaining the happiness index in Republic of Korea
- Won the team project contest for the image and video classification and detection task
- Built a Bayesian linear model for predicting the missing crime rates in the USA.

## STANDARDIZED TESTS

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TOEFL iBT **104/120**: 29/25/23/27 (R/L/S/W) Feb 11, 2023

GRE General Test **V 152** (53%)/ **Q 170** (96%)/ **W 4.0** (54%) Sep 12, 2021

## PROGRAMMING SKILLS

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R (Advanced), C++ (Advanced), Python (Advanced), JAVA (Moderate)

## REFERENCES

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