

RECEP CAN YAVAS

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Singapore

CURRENT POSITION

Postdoc

2024–today

Department of Computer Science, National University of Singapore, Singapore

Supervisor: Prof. Jonathan Scarlett

WORK EXPERIENCE

Postdoc

2022–2024

CNRS at Create, Singapore

Supervisors: Prof. Vincent Tan and Prof. Jonathan Scarlett

EDUCATION

California Institute of Technology (Caltech), US

2016–2022

PhD

GPA: 4.1

Electrical Engineering

Advisers: Prof. Michelle Effros and Prof. Victoria Kostina

California Institute of Technology (Caltech), US

2016–2017

MSc degree

GPA: 4.1

Electrical Engineering

Bilkent University, Turkey

2012–2016

BSc degree

GPA: 3.97

Electrical Engineering

Rank: 3

PUBLICATIONS

Journal Papers

- R. C. Yavas, Y. Huang, V. Y. F. Tan and J. Scarlett, “A General Framework for Clustering and Distribution Matching with Bandit Feedback,” in *IEEE Transactions on Information Theory*, (Early access) doi: 10.1109/TIT.2025.3528655, Jan. 2025
- R. C. Yavas, V. Kostina and M. Effros, “Third-order Analysis of Channel Coding in the Small-to-Moderate Deviations Regime,” in *IEEE Transactions on Information Theory*, doi: 10.1109/TIT.2024.3426509, vol. 70, no. 9, pp. 6139 - 6170, Sep. 2024.
- R. C. Yavas, V. Kostina and M. Effros, “Variable-Length Sparse Feedback Codes for Point-to-Point, Multiple Access, and Random Access Channels,” in *IEEE Transactions on Information Theory*, vol. 70, no. 4, pp. 2367-2394, Apr. 2024.
- R. C. Yavas, and Vincent Y. F. Tan, “Fixed-Budget Best-Arm Identification in Sparse Linear Bandits,” in *Transactions on Machine Learning Research*, Jan. 2024.
- Y. Sakai, R. C. Yavas and V. Y. F. Tan, “Third-Order Asymptotics of Variable-Length Compression Allowing Errors,” in *IEEE Transactions on Information Theory*, vol. 67, no. 12, pp. 7708-7722, Dec. 2021.
- R. C. Yavas, V. Kostina and M. Effros, “Gaussian Multiple and Random Access Channels: Finite-Blocklength Analysis,” in *IEEE Transactions on Information Theory*, vol. 67, no. 11, pp. 6983-7009, Nov. 2021.
- R. C. Yavas, V. Kostina and M. Effros, “Random Access Channel Coding in the Finite Blocklength Regime,” in *IEEE Transactions on Information Theory*, vol. 67, no. 4, pp. 2115-2140, Apr. 2021.

Conference Papers

- R. C. Yavas, V. Y. F. Tan, “Variable-Length Feedback Codes over Known and Unknown Channels with Non-vanishing Error Probabilities”, in Proceedings 2024 Information Theory Workshop (ITW), Nov. 2024.
- J. Chen, R. C. Yavas, V. Kostina, “Variable-Length Codes with Bursty Feedback”, in Proceedings 2023 IEEE International Symposium on Information Theory (ISIT), June 2023.
- R. C. Yavas, V. Kostina and M. Effros, “Third-order Analysis of Channel Coding in the Moderate Deviations Regime,” in Proceedings 2022 IEEE International Symposium on Information Theory (ISIT), June 2022.
- H. Yang, R. C. Yavas, V. Kostina, and R. D. Wesel, “Variable-Length Stop-Feedback Codes With Finite Optimal Decoding Times for BI-AWGN Channels,” in Proceedings 2022 IEEE International Symposium on Information Theory (ISIT), June 2022.
- R. C. Yavas, V. Kostina and M. Effros, “Nested Sparse Feedback Codes for Point-to-Point, Multiple Access, and Random Access Channels,” 2021 IEEE Information Theory Workshop (ITW), Oct. 2021, pp. 1-6.
- R. C. Yavas, V. Kostina and M. Effros, “Variable-length Feedback Codes with Several Decoding Times for the Gaussian Channel,” in Proceedings 2021 IEEE International Symposium on Information Theory (ISIT), June 2021, pp. 1883-1888.
- R. C. Yavas, V. Kostina and M. Effros, “Gaussian Multiple and Random Access in the Finite Blocklength Regime,” in Proceedings 2020 IEEE International Symposium on Information Theory (ISIT), June 2020, pp. 3013-3018.
- M. Effros, V. Kostina and R. C. Yavas, “Random Access Channel Coding in the Finite Blocklength Regime,” in Proceedings 2018 IEEE International Symposium on Information Theory, Vail, Colorado, June 2018, pp. 1261-1265.

RESEARCH INTERESTS

My research interests include information theory, coding, and probability theory. In my doctoral studies, I worked on multiple and random access channels in the finite blocklength regime. I developed coding schemes with high performance for scenarios where an unknown number of transmitters is communicating to a single receiver. Now at postdoc, my interests expanded to multi-armed bandits.

ACADEMIC ACHIEVEMENTS

Fellowship in doctoral studies at Caltech	2016
48th rank among over 2 million in nationwide University Entrance Exam in Turkey	2012
Bronze medal in nationwide Mathematics Olympiads in Turkey	2008

TEACHING EXPERIENCE

I served as a teaching assistant in the following courses taught at Caltech.

EE 126A: Information Theory	2017–2020
EE 126B: Network Information Theory	2017–2020
EE 127: Error Correcting Codes	2020, 2022
EE 160: Fundamentals of Information Transmission and Storage	2021
EE 167: Introduction to Data Compression and Storage	2019
EE 120: Topics in Information Theory	2018
EE 55: Mathematics of Electrical Engineering	2021