

KAPILAN BALAGOPALAN

<https://www.linkedin.com/in/kapilan-balagopalan-5a1832126/>

(+1) 520-283-0924 ◊ kapilanbgp@arizona.edu

#B-116 ◊ 1802 E, Helen Street

USA ◊ 85719

INTRODUCTION

Skilled and hardworking PhD student, with research experience in recommendation systems, bandit algorithms and reinforcement learning and fine tuning LLMs along with industrial work experience in embedded and hardware programming, looking for summer internships

EDUCATION

University of Arizona, USA

Aug 2022 - present

PhD in Computer Science

Current GPA: 3.714/4.0

University of Moratuwa, Sri Lanka

Feb 2014 - Jan 2018

B.S.(Hons) in Engineering

Department Electronic and Telecommunication Engineering

Overall GPA: 3.81/4.2

Hartley College, Sri Lanka

Apr 2010 - Aug 2012

GCE Advanced Level

Physical Science

Z-score: 2.9004 - National rank - 03

WORK EXPERIENCE

Thales Digital Identity & Security

May 2020 - May 2022

Embedded Software Engineer

Thales DIS, Singapore

Development of Smart card OS for Telco, Secure Element, Transport and Banking applications to be deployed on micro controller chips.

London Stock Exchange Group

Feb 2018 - Feb 2020

Hardware Acceleration Engineer

LSEGTechnology, Sri Lanka

Acceleration of time critical modules in exchange and trading platforms using FPGAs.

RESEARCH EXPERIENCE

University of Arizona

Aug 2022 - present

Research Assistant

University of Arizona, USA

1. Broadly working on advanced linear bandit algorithms and best arm identification for multi armed bandits and fine tuning LLMs using partial monitoring under the supervision of Dr. Kwang-sung Jun.
2. Proposed a new randomized algorithm for linear bandits with closed form probability - LinMED (Minimum **E**mpirical **D**ivergence for **L**inear **B**andits)

3. LinMED have a strong theoretical guarantees and empirical performance comparable to state-of-the-art algorithms and even stronger offline evaluation performance.
4. Worked on designing algorithms for best arm identification which can guarantee an exponentially decaying stopping time.
5. Submitted conference paper on item (3) and item (4) at AISTATS, which are currently under review.

Temasek Laboratory, Nanyang Technological University
Research Assistant

Aug 2016 - Dec 2016
NTU, Singapore

1. Implemented improved GEA algorithm based on higher order statistics to separate desired signal in the presence of strong co-channel interference for OQPSK signals.
2. Sequence estimation by applying MMSE equalization on initially separated signal(step 1) and then cancellation of the same signal to estimate the other signal.
3. Combined joint sequence estimation and Iterative Equalization (step 1 and 2)
4. Analyzed the effectiveness of the implemented methodology using recorded real signals.

PUBLICATIONS AND CONFERENCES

1. Minimum Empirical Divergence for Sub-Gaussian Linear Bandits. Kapilan Balagopalan , Kwang-Sung Jun. Under review at AISTATS (2025)
2. Fixing the Loose Brake: Exponential Tail Bounds for Stopping Time in Best Arm Identification. (co 1st author: †) Kapilan Balagopalan†, Tuan Nguyen†, Yao Zhao†, Kwang-Sung Jun. Under review at AISTATS (2025)
3. Wang, G., Kapilan, B., Razul, S.G. et al. Blind Equalization in the Presence of Co-channel Interference Based on Higher-Order Statistics. *Circuits Syst Signal Process* 37, 4150–4161 (2018). doi: 10.1007/s00034-017-0744-x

RELATED COURSEWORKS

Introduction to Machine Learning, Introduction to Computer Vision, Machine Learning Theory, Design and Analysis of Algorithms, Advanced Topics in Artificial Intelligence, Probabilistic Graphical Models, Theory of Statistics, Principles of Networking

TECHNICAL SKILLS

Programming Languages	Python, Java, C/C++, Matlab, Octave, Verilog, Javacard, Embedded C, Latex
Application and Tools	FPGAs, Micro-controllers.

AREAS OF INTEREST

Listed in the order of priority

- Bandit Algorithms
- Recommendation systems
- LLMs
- Machine Learning

REFEREES

References available upon request