

# ANANTA NARAYANAN BALAJI

## PERSONAL INFORMATION

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UNIVERSITY: National University of Singapore  
MAJOR: Electrical and Computer Engineering  
EMAIL: [ananta@comp.nus.edu.sg](mailto:ananta@comp.nus.edu.sg)  
ADDRESS: Systems and Networking Lab 6, School of Computing, NUS  
LINKEDIN PAGE: <https://www.linkedin.com/in/anantabalaji/>

## RESEARCH INTERESTS

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Mobile and Wearable Computing/Sensing , Human computer interaction and Novel on-device AI architectures for wearables

## EDUCATION

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2018-NOW Ph.D. Candidate in Electrical and Computer Engineering  
National University of Singapore  
Thesis Advisor : [Prof. Peh Li-Shiuan](#)  
2015-2016 M.Sc. in Computer Engineering  
National University of Singapore  
Project Advisor : [Prof. Ashraf Kassim](#)  
2011-2015 B.E. in Electronics and Computer Engineering  
Thiagarajar College of Engineering, India  
CGPA: 9.9/10 (1<sup>st</sup> of 150)

## WORK EXPERIENCE

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Mar 2020	<b>Ph.D. Intern @ Google</b> , San Francisco
- Jun 2020	<b>Advisors :</b> <a href="#">Dr.David Kim</a> , Research Scientist and Software Manager <a href="#">Dr. Ruofei Du</a> , Research Scientist Low-power, Low-compute and user-friendly interaction input methods for future Augmented reality devices
Jan 2019	<b>Software Engineer @ Portcast</b> , Singapore
- Jun 2019	Developed an optimal route prediction algorithm for marine logistics
Oct 2016	<b>R&amp;D engineer @ Works Applications</b> , Singapore
- Dec 2017	Worked on Automatic form filling from PDF's for payment invoices
Apr 2016	<b>Research Intern @ Temasek Labs</b> , NUS
- Jul 2016	Advisor: <a href="#">Dr. Garrick Orchard (Now Sr. Research Scientist @ Intel)</a> Noise filtering and UAV tracking with Neuromorphic camera
Dec 2015	<b>R&amp;D Intern @ Panasonic R&amp;D Center</b> , Singapore
- Mar 2016	Mentor: Mr. WEI Zheng (Now R&D Director @ Deep North Inc.) Developed deep learning based Sentence Classification for Chatbots

## RESEARCH PROJECTS

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1. **pH sensing from sweat using smart watches [Mobisys'19]**  
Advisors: Prof. Peh Li Shiuan, Dept. of computer Science and Prof. Shao Huilin, Dept. of Biomedical Engineering, NUS

pH Watch is the first ever prototype for sweat pH (indicator of dehydration risk) sensing using pulse oximeters found in existing wearables

2. **Faster AI-inference enabled body-worn tactile wearable interaction systems (on-going)**

Advisors: Prof. Peh Li Shiuan, Dept. of computer Science

3. **Sensing sweat biomarkers using existing wearable/mobile sensors (on-going)**

Advisors: Prof. Peh Li Shiuan, Dept. of computer Science and Prof. Shao Huilin, Dept. of Biomedical Engineering, NUS

## PUBLICATIONS

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1. pH Watch - Leveraging Pulse Oximeters in Existing Wearables for Reusable, Real-time Monitoring of pH in Sweat

**Ananta Narayanan Balaji\***, *Chen Yuan\**, *Bo Wang*, *Li-Shiuan Peh*, *Shao Huilin*

ACM International Conference on Mobile Systems, Applications, and Services (MobiSys) 2019

Media Coverage : [Straitstimes](#), [NUS News](#), [Healthtech Insider](#), [ACM news](#) etc.

## DEMO

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1. pH Watch - Leveraging Pulse Oximeters in Existing Wearables for Reusable, Real-time Monitoring of pH in Sweat

**Ananta Narayanan Balaji\***, *Chen Yuan\**, *Bo Wang*, *Li-Shiuan Peh*, *Shao Huilin*

ACM International Conference on Mobile Systems, Applications, and Services (MobiSys) 2019

## PATENTS

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1. pH Watch - Leveraging Pulse Oximeters in Existing Wearables for Reusable, Real-time Monitoring of pH in Sweat

**Ananta Narayanan Balaji\***, *Chen Yuan\**, *Bo Wang*, *Li-Shiuan Peh*, *Shao Huilin*

SG Non-Provisional Application [Patent pending]

## INVITED TALKS

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1. "Making Smart watches to sense dehydration" – Systems and Networking Seminar Series – NUS School of Computing.

## AWARDS AND SCHOLARSHIPS

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2018-2022	NUS Research Scholarship Award
2015	Best outgoing student - Medal of Excellence, Thiagarajar College of Engineering
2011-2015	Academic Proficiency Award, Thiagarajar College of Engineering
2014	Top 10 Finalists in Honeywell Young innovators challenge

## PROGRAMMING SKILLS

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Proficient:	C/C++ (Embedded software development), Python, Java, JavaScript, SystemVerilog
Basic Knowledge:	VHDL, Matlab, Synopsis, SQL, Cassandra
Development Boards:	Raspberry Pi, Pynq FPGA, Ultra96 FPGA etc.

## REFERENCES

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Available upon request.