

# ABHILASH JINDAL

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## EDUCATION

Year	Degree/Certificate	Institution	GPA
2011-2017	Doctor of Philosophy, Computer Science Master of Science, Computer Science	Purdue University, West Lafayette	3.77/4.00
2007- 2011	Bachelor of Technology, Electrical Engineering	Indian Institute of Technology, Kanpur	8.7/10

## EXPERIENCE

### [Mobile Enerlytics, LLC](#)

*Co-founder and Chief Technology Officer*

August 2017 - present

### Google

*Software Engineering Intern, Android Power team*

August 2016 - November 2016

## DISSERTATION

### **Towards automated energy debugging in smartphones**

*Guide: Prof. Y. Charlie Hu and Prof. Sonia Fahmy, Purdue University*

With over 2 billion users worldwide and over 2 million apps each in Google and Apple's digital marketplaces, smartphones have permanently advanced human society into the mobile era. Despite the far-reaching societal impact of smartphones, the user experience has been severely limited by phone battery life. The obvious idea of extending smartphone battery life is to improve the battery technology which however has stagnated in the past 15 years and battery capacity is generally viewed as nearing the limits of physics. Instead, this thesis takes the first steps to build automated energy debugging tools that can significantly extend smartphone battery life by exposing energy inefficiencies in various software running on the smartphone.

## MEDIA COVERAGE

- [\[Register, Oct 2018\]](#) AI lifeline to help devs craft smartphone apps that suck a whole lot less... battery capacity
- [\[BBC, Sep 2015\]](#) Tool tackles power-hungry Android apps
- [\[Telegraph, Sep 2015\]](#) New smartphone tool kills apps to save Android battery life
- [\[Times of India, Sep 2015\]](#) New software may 'HUSH' up phone's battery woes
- [\[La Nacion, Sep 2015\]](#) Las aplicaciones móviles, bajo la lupa por el consumo excesivo de la batería del smartphone
- [\[Scientific American, Jun 2015\]](#) Smartphone Battery Drains a Lot Even with Dark Screen
- [\[Mashable, Sep 2014\]](#) Estar: the Ultimate Android App to Master Your Battery Life
- [\[Register, Jun 2012\]](#) Purdue researchers add 'wakelock' cleanup to phone power research
- [\[Engadget, Jun 2012\]](#) Android apps that use power control APIs are often 'battery killers,' oh the irony

- [\[The Verge, Jun 2012\]](#) Android's power management API can lead to 'no-sleep energy bugs,' according to Purdue researcher

## CONFERENCE PUBLICATIONS

- [\[OSDI 2018\]](#) Differential Energy Profiling: Energy Optimization via Diffing Similar apps. **Abhilash Jindal**, Y. Charlie Hu. In *Proceedings of the 12th USENIX conference on Operating Systems Design and Implementation*.
- [\[ATC 2016\]](#) Unsafe Time Handling in Smartphones. X. Mona Chen, **Abhilash Jindal**, Y. Charlie Hu, Samuel P. Midkiff, Prahlad Joshi. In *USENIX Annual Technical Conference*.
- [\[Mobicom 2015\]](#) Smartphone Background Activities in the Wild: Origin, Energy Drain, and Optimization. X. Mona Chen, **Abhilash Jindal**, Ning Ding, Y. Charlie Hu, Maruti Gupta, Rath Vannithamby. In *Proceedings of the 21st Annual International Conference on Mobile Computing and Networking*.
- [\[Sigmetrics 2015\]](#) Smartphone Energy Drain in the Wild: Analysis and Implications. X. Mona Chen, Ning Ding, **Abhilash Jindal**, Y. Charlie Hu, Maruti Gupta, Rath Vannithamby. In *Proceedings of the 2015 ACM SIGMETRICS International Conference on Measurement and Modeling of Computer Systems*.
- [\[WWW 2015\]](#) Energy and Performance of Smartphone Radio Bundling in Outdoor Environments. Ana Nika, Yibo Zhu, Ning Ding, **Abhilash Jindal**, Y. Charlie Hu, Xia Zhou, Ben Y. Zhao, Haitao Zheng. In *Proceedings of the 24th International Conference on World Wide Web*.
- [\[Eurosys 2013\]](#) Hypnos: Understanding and Treating Sleep-Conflicts in Smartphones. **Abhilash Jindal**, Abhinav Pathak, Y. Charlie Hu, Samuel P. Midkiff. In *Proceedings of the 8th ACM European Conference on Computer Systems*.
- [\[Mobisys 2012\]](#) What is keeping my phone awake? Characterizing and Detecting No-Sleep Energy Bugs in Smartphone Apps. Abhinav Pathak, **Abhilash Jindal**, Y. Charlie Hu, Samuel P. Midkiff. In *Proceedings of the 10th international conference on Mobile systems, applications, and services*.

## WORKSHOP AND POSTER PUBLICATIONS

- [\[HotPower 2013\]](#) On Death, Taxes, and Sleep Disorder Bugs in Smartphones. **Abhilash Jindal**, Abhinav Pathak, Y. Charlie Hu, Samuel P. Midkiff. In *Proceedings of the Workshop on Power-Aware Computing and Systems*.
- [\[HotPower 2013\]](#) How Much Energy Can We Save from Prefetching Ads? Energy Drain Analysis of Top 100 Apps. Xiaomeng Chen, **Abhilash Jindal**, Y. Charlie Hu. In *Proceedings of the Workshop on Power-Aware Computing and Systems*.
- [\[Electronic Imaging, SPIE 2011\]](#) Color Image Compression by Gray-to-color mapping, Mark S. Drew, Graham D. Finlayson, and **Abhilash Jindal**.

## JOURNAL PUBLICATIONS

- [\[Applied Soft Computing 2013\]](#) Multi-Objective Optimization and Decision Making Approaches to Cricket Team Selection. Faez Ahmed, Kalyanmoy Deb, **Abhilash Jindal**. *Applied Soft Computing*. 2013 Jan 1;13(1):402-14.
- [\[SEMCCO 2011\]](#) Cricket Team Selection Using Evolutionary Multi-objective Optimization. Faez Ahmed, **Abhilash Jindal**, Kalyanmoy Deb. In *International Conference on Swarm, Evolutionary, and Memetic Computing 2011 Dec 19 (pp. 71-78)*. Springer, Berlin, Heidelberg.

## PATENTS

- [Provisional Patent 62/741920] Differential Energy Profiling with Actionable Diagnostics. **Abhilash Jindal**, Y. Charlie Hu
- [\[US Patent 9,501,382\]](#) Systems and methods of detecting power bugs. Y. Charlie Hu, **Abhilash Jindal**, Samuel P. Midkiff, Abhinav Pathak

## INVITED TALKS

- 13th USENIX Symposium on Operating Systems Design and Implementation, Carlsbad, CA, 2018.
- Huawei Vision Forum Theme: R&D Competency in the Intelligent Era, Santa Clara, CA, 2017.
- Yelp Engineering Learning Group, San Francisco, CA, 2017.
- USENIX Annual Technical Conference, Denver, CO, 2016.
- Panel member on Intersection of Energy & Mobile panel at Mobile Development Day, Champaign, IL, 2015
- Workshop on Power-Aware Computing and Systems - HotPower, Farmington, Pennsylvania, 2013.
- 8th ACM European Conference on Computer Systems- EuroSys, Prague, Czech Republic, 2013.
- 10th international conference on Mobile systems, applications, and services - MobiSys, Low Wood Bay, Lake District, United Kingdom, 2012.

## ACHIEVEMENTS

- Best Undergraduate Project award, Department of Electrical Engineering, IIT Kanpur 2011
- Boeing-IIT Kanpur Scholarship 2010, 2011
- Won first prize in Eureka, Techkriti '10 (intercollegiate poster presentation contest)
- Won second prize in Gimmick, Techkriti '10 (intercollegiate AI building contest)
- Won second prize in Open software contest, Techkriti '10
- Runner-up prize in Endeavour, Techkriti'10 (intercollegiate open hardware contest)
- Won best design award in Gearloose, Techkriti'10 (intercollegiate mechanical designing contest)

## LEADERSHIP

- Organizer, ACM SF Meetup, 2018-present
- Programming club coordinator, 2009-2010. Conducted BOP (Basics of Programming) lectures and workshops attracting 150 students and mentored 8 summer programming projects.
- Science and technology secretary for Hall 3, IIT Kanpur (Elected) 2009-2010.
- Co-ordinator International online programming competition -Techkriti' 10 (Intercollegiate technical festival of IIT Kanpur)
- Co-ordinator virtual stock trading competition- StockSim, Techkriti' 09