

# Camilo ESCOBAR-VELÁSQUEZ

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Systems and Computing Engineering Department  
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## Education

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### **Ph.D. (Student), Engineering, 2019 - Now.**

Universidad de los Andes, Colombia

*Thesis Title:* On improving quality of analysis and testing for Open- and Closed-source Android App

*Advisor:* Mario Linares-Vásquez, Universidad de los Andes, Colombia

*External Advisor:* Gabriele Bavota, Università della Svizzera italiana, Switzerland

### **Ph.D. Research Fellowship, Informatics, Sept. 2020 - Aug. 2021.**

Università della Svizzera italiana

Field: Automation of Software Engineering Tasks

*Advisor:* Gabriele Bavota, Università della Svizzera italiana, Switzerland

### **M.Sc. Software Engineering, 2017 - 2018.**

Universidad de los Andes

*Advisor:* Mario Linares-Vásquez

*Thesis Title:* Automatic Analysis of Android Closed-Source apps to Support Software Engineering Tasks:  
The Mutation Testing Case

### **B.S. Systems and Computing Engineering, 2012 - 2016.**

Universidad de los Andes

Minor: Mathematics

*Advisor:* Jose Tiberio Hernández

## Research Experience

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### ⊗ **Professional Researcher** - Jan. 2019 - Present

Science Ministry; Fundación CardioInfantil; School of Engineering - Universidad de los Andes, Colombia

**Project Title:** *Corazón Saludable: Piloto del plan integral de prevención cardiovascular basado en medicina de precisión y herramientas tecnológicas de mobile health, diseñado para la población Colombiana*

### ⊗ **Graduate Doctoral Teaching Assistant** - Jan. 2019 - Jan. 2022

Systems and Computing Engineering Department - Universidad de los Andes, Colombia

**Project Title:** *On improving quality of analysis and testing for Open- and Closed-source Android Apps*

⊗ **Graduate Research Assistant** - Jan. 2017 - Dec. 2018

Systems and Computing Engineering Department - Universidad de los Andes, Colombia

**Project Title:** *Automatic Analysis of Android Closed-Source apps to Support Software Engineering Tasks:  
The Mutation Testing Case*

## Teaching Experience

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### Co-lecturer

⊗ **Automated Software Testing** - Jan. 2021 - Dec. 2022

Masters in Software Engineering - Coursera - Universidad de los Andes

### Teacher Assistant

⊗ **Software Engineering for Mobile Apps** - Jun. 2021 - Dec. 2022

Masters in Software Engineering - Coursera - Universidad de los Andes

⊗ **Automated Software Testing** - Jan. 2018 - Dec. 2020

Masters in Software Engineering - Universidad de los Andes

⊗ **Software Engineering for Mobile Apps** - Jan. 2020 - Dec. 2020

Systems and Computing Engineering - Universidad de los Andes

### Lab Instructor

⊗ **Design and Analysis of Algorithms**, *Lab Instructor* - Jan. 2017 - Jun. 2017

Systems and Computing Engineering - Universidad de los Andes

## Professional Service

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### Organizing Comitee

⊗ The 39th International Conference on Software Maintenance and Evolution  
ICSME'23, Bogotá, Colombia. <https://conf.researchr.org/home/icsme-2023>

⊗ The 1st Languages and Tools for Next Generation Testing Workshop  
LANGETI'20, Nov 9, 2020, Sacramento, CA, USA. <https://langeti.github.io/>

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## Program Comitee

- ⊗ The 20th International Conference on Mining Software Repositories - MSR'23  
May 15-16, 2023, Melbourne, Australia. *Junior PC - Research Track*
- ⊗ The 9th IEEE/ACM International Conference on Mobile Software Engineering and Systems - MOBILESofT'22  
May 22-23, 2022, Pittsburgh, PA, USA. *Tool Demo and Mobile Apps Track*.
- ⊗ The ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering - ESEC/FSE'21  
August 18-29, 2021, (Virtually). *Artifacts Track*.
- ⊗ The 18th International Conference on Mining Software Repositories - MSR'21  
May 23-24, 2021 (Virtually). *Shadow PC - Research Track*

## Student Volunteer

- ⊗ The 13th IEEE International Conference on Software Testing, Verification and Validation ICST'20, Oct 24-28, 2020, Porto, Portugal.
- ⊗ The 36th IEEE International Conference on Software Maintenance and Evolution ICSME'20, Sep 27 - Oct 3, 2020, Adelaide, Australia.
- ⊗ The 42st ACM/IEEE International Conference on Software Engineering ICSE'20, July 6-11, 2020, Seoul, South Korea.
- ⊗ The 34th IEEE/ACM International Conference on Automated Software Engineering ASE'19 - November 2019 - San Diego, CA, USA.
- ⊗ The 41st ACM/IEEE International Conference on Software Engineering ICSE'19 - May 2019 - Montreal, Canada.
- ⊗ The 34th IEEE International Conference on Software Maintenance and Evolution ICSME'18 - October 2018 - Madrid, Spain.

## Talks

***On improving quality of analysis and testing for Open- and Closed-source Android App*** Encuentro de Experiencias de Investigación en Ingeniería EEII2022 at Universidad de los Andes - December 2022 - Bogotá, Colombia

***Enabling Automated Software Engineering Tasks for Closed-Source Android Apps*** 70th Anniversary of Research and Creation at Universidad de los Andes - November 2018 - Bogotá, Colombia

## Honors and Awards

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### ⊗ **Scholarship from Ministry of Science**

Scholarship provided to PhD Students - Minciencias 909

Jan. 2022 - Dec. 2022 - Bogotá, Colombia

### ⊗ **Swiss Government Excellence Scholarships for Foreign Scholars**

Awarded Project: *Enabling Automated Software Engineering Tasks for Closed-Source Mobile Apps*

Sep. 2020 - Aug. 2021 - Lugano, Switzerland

### ⊗ **Google Latin American Research Award**

Awarded Project: *Enabling Automated Software Engineering Tasks for Closed-Source Mobile Apps*

2020 - 2021 - Bello Horizonte, Brasil

### ⊗ **Google Latin American Research Award**

Awarded Project: *Enabling Automated Software Engineering Tasks for Closed-Source Mobile Apps*

2019 - 2020 - Bello Horizonte, Brasil

### ⊗ **ACM SIGAI travel scholarship**

*Travel support to assist to The 34th International Conference on Automated Software Engineering*

2019 - San Diego, CA, USA

### ⊗ **Google Latin American Research Award**

Awarded Project: *Enabling Automated Software Engineering Tasks for Closed-Source Mobile Apps*

2018 - 2019 - Bello Horizonte, Brasil

### ⊗ **1st Place Team Competition**

Testathon - Chapter 30

April 2019 - Bogotá, Colombia

### ⊗ **1st Place Hackaton Against Human Trafficking**

FIND: A Technological Environment to fight Human Trafficking

November 2018 - Bogotá, Colombia

## Journal Publications

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[J5] Ravelo-Méndez, W., **Escobar-Velásquez, C.**, Linares-Vásquez, M., “*Kraken 2.0: A platform-agnostic and cross-device interaction testing tool.*”, in *Science of Computer Programming* 2022

[J4] Mazuera-Rozo, A., **Escobar-Velásquez, C.**, Espitia-Acero, J., Vega-Guzmán, D., Trubiani, C., Linares-Vásquez, M., Bavota, G., “*Taxonomy of security weaknesses in Java and Kotlin Android apps*”, in *Journal of Systems and Software* 2022 (JSS’22)

[J3] **Escobar-Velásquez, C.**, Mazuera-Rozo, A., Bedoya, C., Osorio-Riaño, M., Linares-Vásquez, M., Bavota, G., “*Studying eventual connectivity issues in Android apps*”, in Empirical Software Engineering 2022 (EMSE’22)

[J2] Ravelo-Méndez, W., **Escobar-Velásquez, C.**, Linares-Vásquez, M., “*Kraken: A framework for enabling multi-device interaction-based testing of Android apps.*”, in Science of Computer Programming 2021

[J1] **Escobar-Velásquez, C.**, Linares-Vásquez, M., Bavota, G., Tufano, M., Moran, K., Di penta, M., Vendome, C., Bernal-Cardenas, C., Poshyvanyk, D., “*Enabling Mutant Generation for Open- and Closed-Source Android Apps*”, in IEEE Transactions on Software Engineering 2020 (TSE’20)

## Conference Publications

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[C14] Mazuera-Rozo, A., **Escobar-Velásquez, C.**, Espitia-Acero, J., Linares-Vásquez, M., Bavota, G., “*Detecting connectivity issues in android apps*”, in Proceedings of the 29th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER’22) - Research Track, Honolulu, HI, USA, March 15-18, 2020.

[C13] Ravelo-Méndez, W., **Escobar-Velásquez, C.**, Linares-Vásquez, M., “*Kraken 2.0: A platform-agnostic and cross-device interaction testing tool*”, in Proceedings of the 29th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER’22) - Tool Demo Track, Honolulu, HI, USA, March 15-18, 2020.

[C12] Naranjo-Puentes, S., **Escobar-Velásquez, C.**, Vendome, C., Linares-Vásquez, M., “*A Preliminary Study on Accessibility of Augmented Reality Features in Mobile Apps*”, in Proceedings of the 29th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER’22) - Early Research Achievement Track, Honolulu, HI, USA, March 15-18, 2020.

[C11] Naranjo-Puentes, S., **Escobar-Velásquez, C.**, Vendome, C., Linares-Vásquez, M., “*A Preliminary Study on Accessibility of Augmented Reality Features in Mobile Apps*”, in Proceedings of the 29th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER’22) - Early Research Achievement Track, Honolulu, HI, USA, March 15-18, 2020.

[C10] Mojica-Hanke, A., Bello-Jiménez, L., **Escobar-Velásquez, C.**, Linares-Vásquez, M., “*Crème de la crème. Investigating Metadata and Survivability of Top Android Apps*”, in Proceedings of the 29th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER’22) - REproducibility Studies and NEgative Results Track, Honolulu, HI, USA, March 15-18, 2020.

- [C9] **Escobar-Velásquez, C.**, Donoso-Díaz, A., Linares-Vásquez, M., “*ITDroid: A Tool for Automated Detection of i18n Issues on Android Apps*”, in Proceedings of the 8th International Conference on Mobile Software Engineering and Systems 2021 (MobileSoft’21)) - Tool Demo Track, Madrid, Spain, May 17 - 19, 2021.
- [C8] **Escobar-Velásquez, C.**, Riveros, D., Linares-Vásquez, M., “*Mutapk 2.0: a tool for reducing mutation testing effort of android apps*”, in Proceedings of the 28th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering 2020 (ESEC/FSE’20) - Tool Demo Track, Sacramento, CA, USA, November 6 - 16, 2020.
- [C7] **Escobar-Velásquez, C.**, Osorio-Riaño, M., Dominguez-Osorio, J., Arevalo, M., Linares-Vásquez, M., “*An empirical study of i18n collateral changes and bugs in guis of android apps*”, in Proceedings of the 36th IEEE International Conference on Software Maintenance and Evolution 2020 (ICSME’20) - Research Track, Adelaide, Australia, September 27th - October 3rd, 2020.
- [C6] Bello-Jiménez, L., **Escobar-Velásquez, C.**, Mojica-Hanke, A., Linares-Vásquez, M., “*Hall-of-Apps: The Top Android Apps Metadata Archive*”, in Proceedings of the 17th International Conference on Mining Software Repositories 2020 (MSR’20) - Data Showcase Track, Seoul, South Korea, October 5-11, 2020.
- [C5] Trujillo, M., Linares-Vásquez, M., **Escobar-Velásquez, C.**, Dusparic, I., Cardozo, N., “*Does Neuron Coverage Matter for Deep Reinforcement Learning? A Preliminary Study*”, in Proceedings of the 2nd Workshop on Testing for Deep Learning and Deep Learning for Testing 2020 (DeepTest’20) - Research Track, Seoul, South Korea, October 5-11, 2020.
- [C4] **Escobar-Velásquez, C.**, “*Source-Codeless Testing for Android Apps*”, in Proceedings of the 13th IEEE International Conference on Software Testing, Validation and Verification 2020 (ICST’20), Doctoral Symposium, Porto, Portugal, October 24-28, 2020.
- [C3] **Escobar-Velásquez, C.**, Osorio-Riaño, M., Linares-Vásquez, M., “*MutAPK: Source-Codeless Mutant Generation for Android Apps*”, in Proceedings of the 34th International Conference on Automated Software Engineering 2019 (ASE’19), Tool Demo, San Diego, CA, United States, November 11-15, 2019.
- [C2] Ravelo-Méndez, W., **Escobar-Velásquez, C.**, Linares-Vásquez, M., “*Kraken-Mobile: Cross-Device Interaction-based Testing of Android Apps*”, in Proceedings of the 35th International Conference on Software Maintenance and Evolution 2019 (ICMSE’19), Tool Demo, Cleveland, OH, United States, October 2-4, 2019.
- [C1] Linares-Vásquez, M., Bavota, G., **Escobar-Velásquez, C.**, “*An Empirical Study on Android-Related Vulnerabilities*”, in Proceedings of the 14th International Conference on Mining Software Repositories 2017 (MSR ’17), Research Paper, Buenos Aires, Argentina, May 20-21, 2017.