

André Pascoal Bento

PhD Student @ CISUC | Assistant Professor @ University of Coimbra

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Communication skills: Portuguese (native), English (advanced), French (intermediate), Spanish (intermediate).

About André Bento is a researcher at the Centre for Informatics and Systems at the University of Coimbra, where he is also pursuing a Ph.D. in Informatics Engineering and teaching as an invited professor. His research focuses on optimizing availability and resource utilization of cloud services. He holds a B.Sc. from the Coimbra Institute of Engineering and a M.Sc. from the University of Coimbra. Passionate about distributed systems, he constantly seeks new learning opportunities. Beyond work, he enjoys swimming, cycling, exploring nature and playing the guitar.

Experience

Sep 2021 - Present, *Invited Professor, University of Coimbra*

Teaching practical laboratory classes on Distributed Systems (B.Sc.) and Systems Integration (M.Sc.) in Informatics Engineering. Topics in Distributed Systems include multi-threading, parallel programming, RMI/RPC, REST services (Spring Boot and FastAPI), and WebSockets. Systems Integration topics cover microservices, service-oriented architectures, integration patterns, data serialization formats (XML, JSON, and Protocol Buffers), Reactive REST APIs and event-driven systems (Apache Kafka).

Sep 2019 - Present, *Researcher, CISUC - Centre for Informatics and Systems (University of Coimbra)*

Researching optimization techniques and root-cause analysis to improve availability and resource utilization of cloud services. Developing solutions using Docker, Kubernetes, Helm, Terraform, Ansible, CI/CD and AWS, alongside service mesh (Istio), observability tools (Grafana, Prometheus, and Jaeger) and data analysis using Pandas, NumPy, and SciPy. Utilizing Python, Java, and Go as programming languages.

Sep 2018 - Jul 2019, *Research Intern, CISUC - Centre for Informatics and Systems (University of Coimbra)*

Researched microservices, observability and performance monitoring using metrics, logs, and distributed tracing.

Feb 2017 - Jul 2017, *Software Engineer Intern, WIT Software, S.A.*

Developed a Mobile Augmented Reality prototype for Android and iOS, implementing digital filters, image manipulation, and user content creation features (e.g., selfies, stickers, photo effects, emojis, and drawings).

Oct 2016 - Jun 2017, *Scratch Teacher Assistant, CASPAE 10*

Taught problem-solving using Scratch programming to primary school children in 3rd and 4th grades.

Nov 2015 - Mar 2016, *Math Applied to Engineer Teacher - Volunteer, CeAMatE*

Taught mathematics to pre-degree and engineering students.

May 2014 - Jul 2014, *Accountant Technician Intern, Caixa de Crédito Agrícola Mútuo de Mira - C.R.L.*

Assisted with bank accounting, organization, and daily operations.

May 2013 - Jun 2013, *Accountant Technician Intern, Caixa de Crédito Agrícola Mútuo de Cantanhede - C.R.L.*

Supported bank accounting and daily operational tasks.

Education

2019 - 2025 (Expected), *Ph.D. in Informatics Engineering, University of Coimbra*

Thesis: *Optimizing Availability and Resource Utilization of Cloud Services.*

2017 - 2019, *M.Sc. in Informatics Engineering, University of Coimbra*

Thesis: *Observing and Controlling Performance in Microservices.*

2014 - 2017, *B.Sc. in Informatics Engineering, Coimbra Institute of Engineering (ISEC)*

Grants and Projects

- **Dec 2021 - Jul 2025, Ph.D. grant** - Foundation for Science and Technology (FCT) grant number BD.06012.2021.
- **2023 - 2025, ROAR-NET** - Randomised Optimisation Algorithms Research Network (CA22137). Funded by COST.
- **2019 - 2022, AESOP** - Autonomic Service Operation. Funded by P2020-31/SI/2017, No. 040004.

Publications

1. **André Bento**, Filipe Araujo, Luís Paquete, and Raul Barbosa. *Optimal Scaling of Cloud Services*. Submitted to an International Journal.
2. **André Bento**, Filipe Araujo, and Raul Barbosa. *Cost-availability aware scaling: Towards optimal scaling of cloud services*. Journal of Grid Computing, 21(4):80, 2023.
3. Gonalo Baptista, Jaime Correia, **André Bento**, Joao Soares, Antonio Ferreira, Joao Duraes, Raul Barbosa, and Filipe Araujo. *Defektor: An extensible tool for fault injection campaign management in microservice systems*. In Proceedings of the 38th ACM/SIGAPP Symposium on Applied Computing, SAC'23, page 184-187, New York, NY, USA, 2023.
4. Stanley Lima, Filipe Araujo, Miguel de Oliveira Guerreiro, Jaime Correia, **André Bento**, and Raul Barbosa. *Efficient causal access in geo-replicated storage systems*. Journal of Grid Computing, 21(1):8, 2023.
5. **André Bento**, Joao Soares, Ant3nio Ferreira, Joao Duraes, Jos3 Ferreira, Rita Carreira, Filipe Araujo, and Raul Barbosa. *Bi-objective optimization of availability and cost for cloud services*. In 2022 IEEE 21st International Symposium on Network Computing and Applications (NCA), volume 21, pages 45-53. IEEE, 2022.
6. **André Bento**, Jaime Correia, Joao Duraes, Jo3o Soares, Lu3s Ribeiro, Ant3nio Ferreira, Rita Carreira, Filipe Araujo, and Raul Barbosa. *A layered framework for root cause diagnosis of microservices*. In 2021 IEEE 20th International Symposium on Network Computing and Applications (NCA), pages 1-8. IEEE, 2021.
7. Jo3o Tom3s, **André Bento**, Jo3o Soares, Lu3s Ribeiro, Ant3nio Ferreira, Rita Carreira, Filipe Araujo, and Raul Barbosa. *Autonomic service operation for cloud applications: Safe actuation and risk management*. In Dependable Computing-EDCC 2021 Workshops: DREAMS, DSOGRI, SERENE 2021, Munich, Germany, September 13, 2021, Proceedings 17, pages 39-46. Springer, 2021.
8. Sara Silva, Jaime Correia, **André Bento**, Filipe Araujo, and Raul Barbosa. *μ Viz: Visualization of microservices*. In 2021 25th International Conference Information Visualisation (IV), pages 120-128. IEEE, 2021.
9. **André Bento**, Jaime Correia, Ricardo Filipe, Filipe Araujo, and Jorge Cardoso. *Automated analysis of distributed tracing: Challenges and research directions*. Journal of Grid Computing, 19:1-15, 2021.