André Pascoal Bento

✉ apbento@dei.uc.pt
📞 (+351) 910 349 466
in andre-bento
🌐 CISUC Profile
G Scholar
🔗 andrepbento

**Address**
R. Lourenço Chaves de
Almeida, Lote 2, 2.D
Coimbra, 3000-249
Portugal

**Communication skills**
Portuguese (native)
English (advanced)
French (intermediate)
Spanish (intermediate)

# André Pascoal Bento
## PhD Student @ CISUC | Assistant Professor @ University of Coimbra

**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 cloud service availability and resource utilization. He holds a B.Sc. from the Coimbra Institute of Engineering and a M.Sc. from the University of Coimbra. Beyond work, he enjoys swimming, cycling, exploring nature and playing the guitar. Passionate about distributed systems, he constantly seeks new learning opportunities.

# Education

**2019 - Present, University of Coimbra**
Ph.D. in Informatics Engineering
*Thesis: Optimizing Availability and Resource Utilization of Cloud Services*

**2017 - 2019, University of Coimbra**
M.Sc. in Informatics Engineering
*Thesis: Observing and Controlling Performance in Microservices*

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

# 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.

**Sep 2019 - Present, *Researcher*, CISUC - Centre for Informatics and Systems (University of Coimbra)**
Researching methods to optimize cloud service availability and resource utilization through optimization and root-cause analysis. Developing solutions using Docker, Kubernetes, Helm, Terraform, Ansible, AWS, Istio, observability tools (Grafana, Prometheus, Jaeger, Kiali), and others.

**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.

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**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.

## Publications

1. **Andre Bento**, Filipe Araujo, Luís Paquete, and Raul Barbosa. *Optimal Scaling of Cloud Services*. Submitted to an International Journal.
2. **Andre 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. Gonçalo Baptista, Jaime Correia, **Andre 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, **Andre Bento**, and Raul Barbosa. *Efficient causal access in geo-replicated storage systems*. Journal of Grid Computing, 21(1):8, 2023.
5. **Andre Bento**, Joao Soares, António Ferreira, Joao Duraes, José 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. **Andre Bento**, Jaime Correia, Joao Duraes, João Soares, Luís Ribeiro, António 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. João Tomás, **Andre Bento**, João Soares, Luís Ribeiro, António Ferreira, Rita Carreira, Filipe Araújo, 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, **Andre Bento**, Filipe Araujo, and Raul Barbosa. *μViz: Visualization of microservices*. In 2021 25th International Conference Information Visualisation (IV), pages 120-128. IEEE, 2021.
9. **Andre 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.

## 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.