Daniel **Kneipp**

Software Engineer

Contact

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in://daniel-kneipp
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Languages

Brazilian Portuguese
[Mother tongue]
English
[Professional working proficiency]

Programming

Python, C++, Go,
R, Bash

Skills

Cloud Infrastructure:

DevOps:

Machine Learning:

Computer Vision:

Text Mining:

Experience

Full time

2017–Now **Research and Development Analyst** *MOST Specialist Technologies*

Development/Machine Learning activities:

- Clustering and analysis of textual medical records;
- Document classification based on its textual content;
- Development of object detection algorithms for ID recognition (demo available at mostqi.com);
- Back-end development in Python and Go.

DevOps activities:

- Designing automated packing and testing processes of Docker containerized services with Gitlab pipelines;
- Blue-Green deployments and Rolling releases with AWS EC2, Fargate, ECS and CloudFormation;
- Deployment and maintenance of a monitoring system and request tracing with Elastic Stack (Elasticsearch and Kibana);
- Infrastructure automation using Ansible to configure ephemeral development instances, Packer to create AWS AMIs and Terraform for the infrastructure provisioning.

Part time

2016–2017 **Research Program** *Invent Vision*

Deep Learning research for Computer Vision applications. Implementation of a set of tools to speedup the development (including synthetic dataset generation) and deployment of image classifiers. Application deployment in embedded systems (NVIDIA Jetson). Project name: Smart monitoring system by georeferenced images for railways applications.

2015–2016 **Trainee** *Invent Vision*

Research and implantation of distributed computing systems (based on Hadoop and Spark), developing simple applications made to run across clusters.

2013–2014 **Undergraduate Researcher** *Invent Vision*

Development of an efficient drowsiness detector based on face expressions (using face and eye tracking algorithms). Deployment made on x86 computers and ARM embedded systems. Project name: System for photometric inspection and automated adjustment of vehicle headlights. Project funded by CNPq (National Council for Scientific and Technological Development).

Education

2016–2018 **Master** of Science *Federal University of Minas Gerais (UFMG)*

Comptuer Science – NanoComp lab. member (http://www.nanocomp.dcc.ufmg.br/).

My research area was DNA Computing. The objective was to propose functional chemical circuits for classification tasks using Chemical Reaction Networks theory as a programming language and DNA strands as the hardware. One of the results of my research is a R package to simulate logic circuits based on DNA. See https://github.com/DanielKneipp/DNAr to know more.

2012–2015 **Bachelor** of Science *Federal University of Viçosa (UFV)*
Computer Science
I received the Presidente Bernardes Medal for my academic excellence. In my undergraduate thesis I developed an algorithm based on a bio-inspired meta-heuristic to solve a combinatorial optimization problem. Title: A Genetic Algorithm for Multi-Component Optimization Problems: The Case of the Travelling Thief Problem.

2010–2011 **Technician's** Degree *SENAI School*
Informatics
I Studied the basics of Computer Architecture, Software Development and Network Infrastructure.

Awards

2015 **University Medal** *Federal University of Viçosa*
The *Presidente Bernardes* Medal is awarded to students with academic excellence.

Communication skills

2017 **Oral Presentation** *Evostar Conference*
Presented the research I conducted to obtain my Bachelor's degree. It was about the usage of Genetic Algorithms to optimize and solve a multi-component combinatorial problem.

Publications

Articles in journals

Algorithm Selection in Adversarial Settings: From Experiments to Tournaments in StarCraft
Anderson Rocha Tavares, Daniel Kneipp S. Vieira, Tiago Negrisoli Oliveira, Luiz Chaimowicz
IEEE Transactions on Games (2018). Institute of Electrical and Electronics Engineers (IEEE), 2018

A Comparison of Algorithms for Solving Multicomponent Optimization Problems
Daniel Kneipp Sa Vieira, Marcus Henrique Soares Mendes
IEEE Latin America Transactions 15.8 (2017) pp. 1474–1479. IEEE, 2017

Conferences/proceedings

DNAr-Logic: A Constructive DNA Logic Circuit Design Library in R Language for Molecular Computing
Renan A. Marks, Daniel K. S. Vieira, Marcos V. Guterres, Poliana A. C. Oliveira, Omar P. Vilela Neto
Proceedings of the 32nd Symposium on Integrated Circuits and Systems Design, 2019, São Paulo, Brazil

A Genetic Algorithm for Multi-component Optimization Problems: The Case of the Travelling Thief Problem
Daniel KS Vieira, Gustavo L Soares, Joao A Vasconcelos, Marcus HS Mendes
European Conference on Evolutionary Computation in Combinatorial Optimization, 2017