Daniel Mejía Raigosa

About me

I am a talented, excellent self-taught person eager for learning, curiosity and passion drive everything that I do, at work as well as at a personal level. As a scientist majored in physics, combined with five years working as freelance programmer, allow me to adopt and implement novel and creative solutions for complex and challenging product requirements. I have good social skills, mainly good communication thats the reason I'm eloquent, empathetic, and conciliator, I like to have open and honest communication channels. One of my convictions is that mutual aid can achieve amazing results, I perform well at teamwork and advocate for it, since I like to see my teammates grow and improve and I look for ways to support them and influence them to be better as means for my own improvement

Academic formation

2017 **Physicist**, *Universidad de Antioquia*, Medellín.
Bachelor on Sciences offered by the Faculty of Exact Sciences, it is focused in formation of professionals capable of doing cutting-edge research and occupy higher education roles.

2005 **Bachiller Académico**, *I.E. La Salle de Campoamor*, Medellín.
High school.

Computation and Programming

Linux/Unix **Advanced**.
Integral system administration (users, resources, services, permissions, etc.) at Linux operating systems, with emphasis at GNU/Linux Debian distributions and its derivated distributions (Ubutu, Mint,...) I'm used to build packages from source when needed, particularly scientific libraries for simulations and general numerical operations. I handle myself really well with the Bash terminal either local or via SSH

Programming Languages **Advanced**.
I have wide experience doing software development with different langagues and under different paradigms: strucutured, Object oriented and functional programming.
Advanced NodeJS, Go (golang),C, C++, Latex (2ϵ).
Intermediate Python(3), shells Sh and Bash.
Basic Embedded systems (PIC Microcontrollers, Arduino and compatibles, ESP32, ESP8266, STM32, RaspberryPI).

Carrera 53 # 1 - 08, Interior 302 – Medellín, Colombia
+57 310 380 9386 • *danielmejia55@gmail.com*
http://daniel-m.github.io • *Daniel-M*

Technologies **Advanced**.

Common technologies involved in the development of backend services and microservice-infracstructures, I've focused mainly in High Available and Heavy load microservices in the cloud

Advanced API REST (NodeJS with Express and KoaJS; Python with Flask, DJango and Falcon; Go: pure go, reveal, go-chi, go-gorilla. Authentication with JWT), Socket.io, Websockets, Redis (in-memory store), Elasticsearch, Git.

Intermedite Ansible, Docker, Docker-Compose, Kubernetes (GCP), API GraphQL (NodeJS via ApolloServer, Python via DjangoGraphQL), MongoDB (Python, Go, NodeJS), PostgreSQL (Python, NodeJS, Go).

Basic Nginx, Basic Python Datascience Stack: Numpy, Pandas, Matplotlib, Pytorch, Scikitlearn, OpenCV

Cloud Computing **Advanced**.

Hands on experience with Cloud platforms, specially with Google Cloud Platform (GCP), Digital Ocean (DO) and Amazon Web Services (AWS) in that order. I'm capable of managing full cloud infrasctruture at GPC consisting of SQL databases, Kubernetes clusters, Cloud Functions, Firebase, LoadBalancing, Cloud CDNs, and Google App Engine resources with ease. I usually set continuous delivery (CD) pipelines between my source-code forges and cloud-deployed services, so the delivery is always automated and on-time

Advanced Google Cloud Platform, Digital Ocean.

Intermediate Amazon Web Services, Heroku.

Basic IBM.

Carrera 53 # 1 - 08, Interior 302 – Medellín, Colombia
+57 310 380 9386 • danielmejia55@gmail.com
http://daniel-m.github.io • Daniel-M

Experience

Software Developer

2017 – Today **Freelance**, *Coordinator: Santiago Gaviria*, Backend Development - DevOps.

As freelance programmer I've worked at many projects involing the use of different technologies. Among the most representative, interesting and challenging were,

- The integration of AWS API Gateway, AWS Rekognition, ElasticCompute and AWS Lambda functions for a login system using face recognition. This project lasted three months
- Integrated a simple Access Management server using Python Falcon and MongoDB. Worked for two months
- Integrated an hybrid microservices backend consisting of a central API written in pure Go (Go + MongoDB) that communicated with services writteng in Python (Flask and Falcon) that made data analysis over input data. This project lasted five months
- Migrate a Django (python) REST API to GraphQL (django-graphql). Involed for three months
- Worked for a recommender system deployed at GCP, build over several microservices and workflows
  - It used a kubernetes cluster with PostgreSQL + ExpressJS for API management, KoaJS + Elasticsearch stack for recommendations.
  - A data ingestion and analysis (ETL) ran each weekend, the spawning of the ETL was built using a custom made scripts, servers and using Google Cloud Scheduler. The spawning process of the ETL prepared kubernetes clusters at GCP, started GCE nodes, prepared Elasticsearch indices, and started the ETL pipeline whilst nofying via Slack of any progress or issues. I were responsible of the design and implementation of the spawning process described
  - The data was done over images and descriptions and combined Flask Servers with Deeplearning algorithms (using Tensorflow and Pytorch), custom Go tooling for general RGB color space clustering, and word processing over the captions. I were responsible of setting up the Flask servers, and responsible of both the Go tooling and the Pytorch step which used fine-grained analysis over image region of interests (ROI) to get the desired outputs of the models.
  - Each monday, as part of the automation I made, a synchronization process ran and kept the production data fresh and clean, it alerted via slack of the progress and results of the ETL process so adjustments could be made
  - I was the main developer of the KoaJS + Elasticsearch component of this system, which was the core of the recommendations engine implemented at that time

  This has been my longest project, also one of the most challenging due to the nature of complexity of the system. My involvement spanned two and half years
- A backend consisting of a GraphQL server (ApolloGraphQL) + MongoDB and InfluxDB databases ingesting time series and reporting changes on data via emal and push notifications. The challenges of this project are the integrations with the InfluxDB REST API, the webpush components which are new to me, and setting up the sendmail and domain properly in order to have email notifications and interactions with the users provided the adequate events. I've been working on this for roughly a year and a half

Research Groups

2010 – 2021 **Biophysics Research Group (Grupo de Biofísica)**, *Director: Marco A. Giraldo C.*, Facultad de Ciencias Exactas – Universidad de Antioquia, Role: Researcher - Graduated student.

Marco Antonio Giraldo Cadavid.
Phone: (4)219 56 30.
E-mail: `mantonio.giraldo@udea.edu.co`
Address: Calle 67 # 53 - 108 – Bloque 6, oficina 431 – Medellín

2011 – 2021 **Physiology and Biochemistry Group - PHYSIS (Grupo de Fisiología y Bioquímica PHYSIS)**, *Director: Juan Camilo Calderón V.*, Facultad de Medicina – Universidad de Antioquia, Role: Researcher - Graduated student.
Juan Camilo Calderón Vélez.
Phone: (4)219 60 30.
E-mail: jcalderonv00@yahoo.com
Address: Carrera 51D # 62 - 29 – Medellín

Research Projects

2012 – 2013 **Undergraduate Thesis**, *"Diseño y modelación in silico de la vía de señalización de CDK5 involucrada en la hiperfosforilación de τ"*, Escuela de Microbiología y Bionálisis – Universidad de Antioquia, Grupo de Neurociencias de Antioquia, Role: Advice and Simulations.
Presented by: **Alejandro Uribe Arias.**
E-mail: uribealej@gmail.com
Asesor: MSc. John Fredy Castro Álvarez, Candidato PhD. Del Grupo de Neurociencias de Antioquia (2013)

2011 – 2017 **Proyecto CODI**, *"Estudio del acoplamiento excitación-contracción en músculo esquelético de mamífero según el tipo de fibra en condiciones de reposo y fatiga"*, Facultad de Medicina – Universidad de Antioquia, Role: Student researcher.
Under supervision of: **Juan Camilo Calderón Vélez.**
Teléfono: (4)219 60 30.
E-mail: jcalderonv00@yahoo.com

2014 **Project**, *"Diseño y construcción de un Foto-biorreactor de columna de burbujeo con monitoreo de concentración de microalgas en tiempo real"*, Universidad de Antioquia, Role: Research and electronics.
Main researchers: Gerardo Gutirrez G., Daniel Mejía R.

2015 **Project**, *Genomics and Transcriptomics Cooperation between Grupo de Biofísica and el Grupo de Herpetología, Faculty of Exact and Natural Sciences*, Universidad de Antioquia, Role: Sofwfare development and simulations, proposed algorithms and implemented them in order to find DNA sequences exploiting HPLC and GRID DNA and HPC (High Performance Computing) infrasctruture available. The deliverables performed computations on a fraction of the expected time, algorithms of my own, implementation at C++..

Academic Exchange

2012 **Venezuela**, *Cellular Physiology Laboratory Internship*, IVIC (Instituto Venezolano de Investigaciones Científicas), Role: Student internship.
Learning experimental protocols in skeletal muscle physiology. Calibration of intracellular flourescent dyes of *single wavelegth* kind.
Intership under the advice of PhD. Carlo Caputo and Msc. Pura Bolaños – IVIC, PhD. Juan Camilo Calderón – Facultad de Medicina - Universidad de Antioquia.

Given courses

2016 **Tutor**, *IESONLINE*, Medellín, Intensive course on GNU/Linux systems and git version control.
Design of course contents on GNU/Linux systems, the linux terminal and general system administration, with an introduction to the use of GIT version control. The course had a lenght of 8 hours
IESONLINE: departamentotecnico@iesonline.com.co

Volunteering

2011 – 2013 **Comité Académico**, *Revista de Divulgación Científica Mínima Acción*, Medellín, Non paid.
General editing and content moderation of contents for the magazine, caring for the scientific rigor and seriousness

2013 **Cómo detectamos las partículas subatómicas?**, *Biblioteca EPM*, Medellín, Non paid.
Activity directed to high-school teachers, consisting in how to build a homemade cosmic-ray detector in the classroom so the students could see subatomic particles. The activity was part of the *Workshop on scientific divulgation on modern physics* offered by the *Mínima Acción.* magazine

2011 **Primer Congreso de Divulgación Científica**, *Universidad de Antioquia*, Medellín, Non paid.
Logistics

2010 **IX Juegos Suramericanos**, Medellín, Non paid.
Protocol volunteer at different contests

2009 **XIX Campeonato Sudamericano de Mayores y IX Infantil, Junior y Sub 21 de Karate Do**, Medellín, Non paid.
Logistics and general volunteering.

Others

2009 **Karate-Do Instructor**, *INDER Medellín*, Medellín, Proyecto del Presupuesto Participativo y la Liga Antioqueña de Karate-Do.
Karate-Do instructor for the project: *Clubes de Karate Do y Judo en Guayabal Modelo de Desarrollo Humano y Convivencia Ciudadana*.
Juan David Cañon Montaño. Licenciado en Matemáticas y Física de la Universidad de Antioquia. Cinturón Negro 3 Dan en Karate Do. Instructor de Karate Do – Universidad de Antioquia. Instructor de Karate Do – Colegio Mayor de Antioquia. Ex-presidente de la Liga Antioqueña de Karate Do
Teléfono: 300 610 00 32.

Languages

Español **Mother tongue**.

English **Fluent**.
Fluent at speaking, writing and reading

Congresses and seminars

2013 Course: Curso de Actualización en Genómica, Transcriptómica y Proteómica. 1 y 2 de Octubre de 2013. Corporación de Ciencias Básicas Biomdicas (CBB). Universidad de Antioquia. Medellín. Asistente.

2013 Course: Simulations of the dynamics of biomolecules using the GROMACS package. 4, 5, 11, 12, y 13 de Junio de 2013. Universidad de Antioquia. Medellín. Asistente.

Carrera 53 # 1 - 08, Interior 302 – Medellín, Colombia
+57 310 380 9386 • *danielmejia55@gmail.com*
http://daniel-m.github.io • *Daniel-M*