

SERGIO VALBUENA

M.Sc. Civil Engineer



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savalbuena

PROFILE

Ph.D. candidate at the University of California – Davis working in the Tahoe Environmental Research Center (TERC). Presently working on investigating nearshore physical processes and water quality by applying 3D numerical modeling and large datasets from in-situ observations to understand upwelling dynamics, and inflow transport fate in rotationally influenced lakes. Previous experience in hydrologic and hydraulic modeling of small lakes and wetlands, and project control and alignment to high standards management protocols. In search of constant academic and professional growth while working in team. Entrepreneur with fast learning and adaptability skills.

EDUCATION

University of California – Davis

2018 – Present

Doctor of Philosophy

Civil and Environmental Engineering

Water Resources

Lake Hydrodynamics

Advisors: Fabian Bombardelli & Geoffrey Schladow

University of California – Davis

2017-2020

Master of Science, Civil & Environmental Engineering

Emphasis in Water Resources and Nearshore Lake

Hydrodynamics

Advisor: Fabian Bombardelli

Colombian School of Engineering Julio Garavito

2011-2016

Bachelor of Science, Civil Engineering

Honors:

Summa Cum Laude

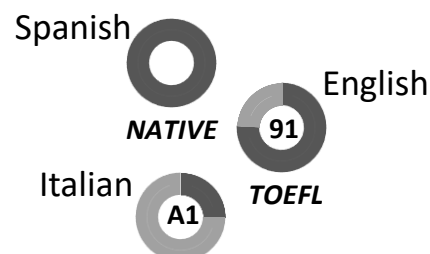
TECHNICAL SKILLS

- Matlab A.K.
- si3D A.K.
- OpenFOAM A.K.
- HEC-RAS A.K.
- AutoCAD A.K.
- Python A.K.
- Microsoft Excel A.K.
- Data Management A.K.
- Time Series A.K.
- ArcGIS B.K.
- QGIS B.K.
- Microsoft Project B.K.
- SQL B.K.

advanced knowledge: A.K.

basic knowledge: B.K.

LANGUAGES



RESEARCH EXPERIENCE

Graduate Student Researcher

University of California – Davis, USA / Jan 2018 – Present

- Led field campaign to investigate water clarity losses due to anthropogenic activities in the nearshore area of a lake.
- Data manager of the Nearshore Network long-term program to monitor water quality near the shore around Lake Tahoe.
- Investigated boat induced sediment resuspension in shallow flows by applying 3D numerical modelling of a recreational boat. *Published in River flow 2020 10th conference on fluvial hydraulics.*
- Investigating 3D dynamics of upwelling events in rotationally influenced lakes and water quality by applying hydrodynamical model si3D.

TEACHING EXPERIENCE

Teaching Assistant

Fluid Dynamics

University of California – Davis, USA / F2019, F2020, W2021

Organized laboratory lectures, demonstrations, and data collections for junior level fluid mechanics course.

Hydraulics | Open Channel and Pipe Flow

University of California – Davis, USA / W2018, F2018, S2019, S2020

Organized laboratory lectures, demonstrations, and collection of data for the senior level hydraulics course. Aided in grading laboratory reports and final exams.

Water Resources Simulation

University of California – Davis, USA / W2019

Hold a weekly one-hour discussion session to provide insights about course topics and aided in grading exams.

W – Winter Quarter | S. – Spring Quarter | F. – Fall Quarter

WORK EXPERIENCE

Hydraulic Engineer

Assistant of M.Sc. Alejandro Duran. / Bogotá D.C, Colombia / Sept 2016 – Sept 2017

Functions: perform and report hydrologic and hydraulic studies to more than 100 small lakes and wetlands in Cundinamarca, Colombia. Highway hydraulic design of two road sectors in Cundinamarca, Colombia.

Project Engineer

INNOVATECH STRATEGIC SOLUTIONS S.A.S – Based in Houston, Texas, USA / Office Bogotá D.C, Colombia / Jan 2016 – Sept 2016

Functions: professional support in the construction, plan monitoring strategy, budget structuring, preparation of reports, progress, and traceability of projects.

HONORS & AWARDS

University Colombian School of Engineering Julio Garavito – 2016

- Summa Cum Laude within Civil Engineering department for best overall undergraduate GPA.

California Lake Management Society (CALMS) Scholarship – 2021

- One of the 4 graduate students to receive the scholarship during summer 2021
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