Carlos Vigil Vásquez

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Experience

- **Molecular Design Lab, Pontificia Universidad Católica de Chile** Hybrid
  Research Assistant *July 2017 - today*
  - Development of a series of network-based target prediction methods that exceeded state-of-the-art performance employing novel ideas obtained from social and physics-derived studies.
  - Implementation a series of pipelines for common cheminformatics tasks that helped accelerate prototyping and development of novel methodology in the laboratory.

- **Psychophysiology Lab, Pontificia Universidad Católica de Chile** Remote
  Research Assistant *January 2022 - today*
  - Implementation of tools and workflows for processing and analysing experimental data obtained from different experiments.
  - Development of machine-learning models capable of classifying human subjects based on their cognitive state related to contemplative practices and well-being.

Education

- **Biochemistry** Santiago, Chile
  Pontificia Universidad Católica de Chile *2015 - 2022*
  - Licenciate grade 5.6/7.0 (3.1/4.0 in GPA scale)
  - Undergraduate research thesis 7.0/7.0 (4.0/4.0 in GPA scale)
  - Graduated with 2 of 3 votes of distinction

Publications

- **Vigil, C.**; Schüller, A. *De novo* prediction of drug targets and candidates by chemical similarity-guided network-based inference. IJMS (2022). DOI:10.3390/ijms23179666

Presentations

- **Antifungal drug discovery by chemical similarity-guided network-based inference**: Sociedad Chilena de Bioinformática (January, 2022)
- **DDTNBI: de novo target prediction using a social network-derived method**: ISMB/ECCB (August, 2021)
- **A computational chemogenomics method for the prediction of off-target interactions with coagulation factor Xa**: EHA (August, 2020)
- **Limits and potential of in silico target prediction by chemical similarity**: ISCB-LA (October, 2018)

Awards

- **Undergraduate Research Contest - Winter 2017**: Project title: "*In silico* prediction and prioritization of novel drug targets."
- **Undergraduate Research Contest - Summer 2020**: Project title: "Use of biochemical networks for the prediction of novel drugs for coagulation factor Xa"

Research projects

- Weak-links paradox for *de novo* target prediction
- Use of biochemical networks for the prediction of novel drugs for coagulation factor Xa
- Integrating chemical, structural and relacional information for protein-ligand interaction prediction using molecular netwoks
- SLiP: SchuellerLab Ligand Priorization
- *In silico* prediction and prioritization of novel drug targets

Skills

- **Human languages**: Spanish (native), English (TOEFL score 101 of 120)
- **Machine languages**: Python, Julia, LaTeX, Bash, SQL
- **Frameworks**: Graphs.jl, CUDA.jl, Plots.jl, Scikit-Learn, Pandas, NumPy, Matplotlib, Seaborn, NetworkX, Pingouin
- **Tools**: Git, GitHub, MySQL, SQLite
- **Platforms**: Linux, MacOS
- **Practical experience**: Recommender systems, graph theory, statistics, data visualization, REST API

Miscellaneous

- **Co-delegate of the Association of Biochemistry Students (ANEB)**: Period: 2018
- **Member of the Association of Biochemistry Students (ANEB)**: Period: 2016 - 2021
- **Member of the International Society for Computational Biology (ISCB)**: Period: 2018 & 2021