Christopher Valle

Résumé

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Education

2015 **Ph.D. Educational Psychology and Methodology**,
University at Albany/State University of New York, GPA: *3.85*,
Fully funded by the Carson Carr Graduate Scholar Fellowship
Focus: Research, Evaluation, and Computational Statistics.
Dissertation: *Effects of Criteria-Referenced Formative Assessment on Achievement in Music*

2011 **Certificate of Advanced Study in Educational Research**, *University at Albany/State University of New York*.
Capstone research: *Sense of Efficacy of Middle School Teachers Working with Struggling Readers*

2010 **M.S. Educational Psychology and Methodology**, *University at Albany/State University of New York*, GPA: *3.9*.

2008 **B.M. Music Education**, *College at Fredonia/State University of New York*,
Magna cum laude, GPA: *3.57*.

Professional Experiences

Data Science & Applied Statistics

May 2017 - Present **Senior Analyst, Product Analytics Team Lead**, *3M Health Information Systems | Albany, NY*.

- Lead a team of analysts in developing, implementing, delivering, and automating analytical products and services.
- Analyze and model healthcare data for payer and provider clients via Python, R, and SQL.
- Causal inference modeling of relationships between value-based care programs (e.g., accountable care organizations and patient-centered medical homes) and cost, utilization, and quality outcomes.
- Serve as a thought leader on research and evaluation methods, statistical techniques, and data visualization.
- Lead the Supportive Analytics Center of Excellence, which includes five knowledge teams: Pharmacy Solutions, Predictive Analytics, Social Determinants of Health, Specialist Solutions, and Strategic Opportunity Analysis.
- Co-lead the predictive analytics knowledge team and provide development support on predictive models.
- Automated a sophisticated, resource intensive analysis delivered to payer clients annually, reducing analyst manual work by 98% and substantially reducing potential errors in processing.

Sep 2016 - May 2017 **Lead Analyst**, *3M Health Information Systems | Albany, NY*.

- Analyzed and modeled healthcare data for payer and provider clients via Python, R, and SQL.
- Provided leadership on analysis and report optimization and automation.
- Served as a thought leader on research and evaluation methods, statistical techniques, and data visualization.
- Developed program evaluations to investigate the casual effects of value-based programs using modern statistical techniques (e.g., propensity score analysis and multilevel modeling).
- Developed an internal software application (using C#) that automates the creation of 15 monthly Excel reports for 10 Medicare and Medicaid clients.

Nov 2015 - Sep 2016 **Senior Data Analyst**, *Excelsior College | Albany, NY*.

- Developed statistical and machine learning models via Python and R to estimate the likelihood (as a risk score) that an enrolled student would engage in course, exam, or transfer credit activity in the future. Created an automated process to generate risk scores daily in the production environment. Risk scores used internally and by external third party vendors to target daily coaching activities to academically at-risk students.
- Developed a process of integrating statistical and machine learning models into the production environment.
- Conducted internal evaluations of coaching programs and other initiatives designed to promote student success.
- Developed predictive models to forecast course registration patterns to guide decisions related to academic advising and course section offerings.

Mar 2015 - Nov 2015 **Analyst II**, *3M Health Information Systems | Albany, NY.*

- Analyzed and modeled healthcare data for payer and provider clients via Python, R, and SQL.
- Delivered Excel-based reports of analyses.
- Developed internal software applications to streamline, standardize, and automate analyses and data visualizations.
- Conducted program evaluations of value-based programs (e.g., accountable care organizations and patient centered medical homes).
- Led a knowledge team focused on enhancing analyses and processes related to program evaluation.
- Fulfilled internal and external data and analysis requests.
- Performed quality control checks and validations of analyses.

Sep 2014 - Mar 2015 **Project Assistant**, *Office of Teacher and Leader Effectiveness, New York State Education Department | Albany, NY.*

- Conducted data analyses via Python and R related to the Annual Professional Performance Review (APPR) process and Strengthening Teacher and Leader Effectiveness grant, including generating reports and data visualizations of analyses of trends at state, district, school, teacher, and student levels.
- Received, processed, and fulfilled internal and external data requests.
- Performed quality control checks and validations of analyses, including ensuring the accuracy of data reported in publicly released documentation.
- Assisted in building and maintaining databases of approved APPR plans and staff evaluation data, and developing Access applications to interface with the data.
- Provided technical assistance and support related to program evaluation, research methodology, rubric development, and statistics and statistical programming.

Consulting

Apr 2017 - Sep 2017 **Data Scientist**, *Excelsior College | Albany, NY.*

- Assess predictive validity of current credit activity risk models.
- Retrain existing models based on validity assessments.
- Develop models predicting student persistence, retention, and engagement.

Jan 2016 - Sep 2016 **Analytics Consultant**, *3M Health Information Systems | Albany, NY.*

- Assist the analyst and research teams in developing and refining analyses for commercial, Medicare, and Medicaid payer and provider clients.
- Conduct evaluations of value-based programs.
- Develop internal software applications to automate analyses and reporting.

Research & Program Evaluation

Sep 2011 - Dec 2015 **Research Assistant**, *Formative Assessment in the Arts Research Team, | University at Albany.*
Principal investigator: Dr. Heidi Andrade

- Research investigating the effects of a formative classroom assessment process on students' achievement in dance, music, theater, and visual arts.
- Analyzed data of students participating in the Arts Achieve project, a program funded by two-grants: Investing in Innovation (i3) and Arts in Education Development and Dissemination.
- Created statistical programs using R to clean quantitative achievement and demographic data, conduct complex statistical analyses (e.g., multiple imputation and propensity score analysis), and created data visualizations.

Sep 2013 - Jul 2014 **Lead Evaluator**, *Albany Institute of History and Art | Albany, NY.*

- Led the evaluation of Book Arts 2014, a program incorporating drawing, printmaking, and visual arts instruction into English Language Arts, math, science, and social studies public school curricula.
- Designed the evaluation plan and observational instruments.
- Conducted qualitative analyses using triangulation procedures with observational data and cognitive data from student worksheets.
- Organized and wrote two formative reports and a final summative report to disseminate findings to stakeholders.

May 2013 - Oct 2013 **Research Assistant**, *DTSDE 2.0 Project | University at Albany.*

- Revised the New York State Education Department's Diagnostic Tool for School and District Effectiveness (DTSDE), a rubric designed as a formative and summative instrument for turnaround public schools across New York State.
- Reviewed literature on best practices in feedback delivery.
- Embedded formative assessment techniques in the DTSDE evaluator training, created instructional materials for the training, and provided recommendations for improving the DTSDE training effectiveness survey measures.
- Consolidated observation, interview, and focus group data collection instruments.
- Designed classroom visitation protocols for a variety of classroom settings, which are now being used by DTSDE evaluators across New York State.

May 2010 - May 2012 **Research Assistant**, *The Evaluation Consortium | University at Albany.*

- Evaluated national and state funded programs, including the NYC Striving Readers project funded by the National Science Foundation, the Rensselaer Polytechnic Institute Mobile Studio program, and programs with the Rensselaer Polytechnic Institute Smart Lighting Engineering Research Center.
- Coordinated observations of classrooms across 10 public schools.
- Designed observation and interview protocols and survey measures.
- Analyzed data from observations, interviews, surveys, and cognitive and affective measures using qualitative methods and descriptive and univariate statistics.
- Disseminated program findings through formative and summative reports.

Web Development & Administration

Sep 2012 - Sep 2014 **Webmaster**, *School of Education | University at Albany.*

Developed and managed websites for the School of Education (SoE). Processed website maintenance requests for the departments and divisions within the SoE.

Teaching

Fall 2011 **Instructor**, *University at Albany | Albany, NY.*

EPSY 420: Child and Adolescent Development

- Lectured on theory and research in social, emotional, physical, and intellectual development and its application to instruction. Emphasis on late childhood through middle adolescence.

Fall 2011 **Teaching Assistant**, *University at Albany | Albany, NY.*

EPSY 630: Statistical Methods II

- Facilitated statistics lab sessions, graded student work, and assisted in classroom activities.

Technical skills

Research Methodology	Experimental and quasi-experimental designs, psychometrics and measurement, test development, program evaluation methods, qualitative methods, mixed-methods, observational methods, survey research, summative and formative assessment of institutional, program, and learning outcomes.
Statistics	Correlation, multiple and logistic regression, factorial and repeated measures analysis of variance, multivariate analysis of variance, multilevel (mixed-effects, hierarchical, nested, etc.) modeling, propensity score analysis, multivariate imputation by chained equations, cross-validation, bootstrap sampling, and bootstrap aggregation.
Machine Learning	Classification and regression trees, conditional inference trees, k-nearest neighbor classification, gradient boosting, random forest, and ensemble methods.
Computational Statistics	Extensive experience with Python and R. Capable of generating reproducible research and reports with LaTeX, R Markdown, and R Sweave. Experience developing software applications with C# to interface with R. Experience with the statistical computing and graphics capabilities of Python, including matplotlib, numpy, pandas, and scikit-learn.
Database programming	Extensive experience with Oracle SQL and T-SQL.
General programming	Application development experience with C# and Basic. Moderate experience and knowledge of HTML, CSS, C, C++, Java, and Javascript.
Additional software	Access, Adobe Acrobat, ArcGIS, Dreamweaver, Excel, Jira, Microstrategy, Oracle SQL Developer, Outlook, PowerPoint, Publisher, SQL Server Management Studio, Visual Studio, and Word.
Operating Environments	Linux, Microsoft Windows, and Unix.