Sean Draper

Data Science for NHL Hockey Operations

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EXPERIENCE

Edmonton Oilers — *Director of Research, Analysis & Software Development*

1998 - PRESENT.

Evaluation of amateur and pro scouting staff workflow, procedures and outcomes and the in-house development of information management systems for decision making in Hockey Operations.

Integration of NHL data sources with 3rd party (proprietary) data to provide analytical insight and graphical data analysis across all areas of Hockey Operations (drafting, development, player personnel, cap management, pre-game preparation and post-game evaluation)

Bayesian inference, Markov Chain Monty Carlo (MCMC) simulation modelling of in-game advanced statistical data.

National Hockey League Players Association — *Chief Statistician*

September 1997 - February 1998

Statistical analysis of player performance and compensation in preparation for arbitration hearings. Developed software for the projection of player compensation based on performance variables, for the compilation of player contract history information and statistical history analysis. Provided input into the development of the NHLPA's enterprise-wide application "POINTS" (Player Online Information Tracking System" relating to arbitration and player compensation analysis.

Quebec Nordiques/Colorado Avalanche — *Consultant*

1994 - 1997

Built a custom software solution for the management and analysis of scouting information

University of Ottawa — *Sessional Instructor*

1993 - 1995

Taught graduate level as well as senior undergraduate level Statistics and Research Methods courses.

Masters Level Courses Taught:

Data Science

Analytics experience in R, (RStudio with visualizations in Shinyapps.io), SPSS, JMP (SAS) and Python

Data connectivity to NHL sources with XML/XSLT, JSON (RTSS), RinkNet via ODBC(MS Access)

Relational (SQL, MySQL), Non-relational (NoSQL) databases (MongoDB) as well as Hadoop.

Cloud data services - GoogleCloud, AWS, Microsoft Azure

App Development

Cross-platform app development in FIleMaker

iOS Development in Apple XCode

Windows app development in Microsoft Visual Studio

Web development in HTML5

Media Production

Video post-production in Adobe Premiere, Apple FinalCut Pro X

Quantitative Dat Analysis in Sport, Physical Activity and Health
Advanced statistical analysis and interpretation of data derived from experimental and quasi-experimental research. Application of analysis of variance, analysis of covariance, MANOVA and techniques of linear regression, multivariate analysis and factor analysis. Prerequisite: undergraduate statistics course is strongly recommended.

Quantatative Research Methods in Sport, Physical Activity and Health
Discussion of theoretical foundations of quantitative research methods. Detailed examination of a research proposal. Critical evaluation of methodology and analysis of research related to sport, physical activity and health.

Undergraduate Level Courses Taught

Measurement and Data Analysis in Human Kinetics

Coaching Association of Canada — *Statistical Analysis Consultant*

1996

Responsible for the analysis and report of the National Coaching Certification Program Model Coach Survey

EDUCATION

University of Ottawa — *Masters Degree*

1995

Master of Arts in Human Kenitics (Sports Psychology).

Masters Level Statistics Courses Taken:

APA5101 - Introduction to Research
APA5191 - Methods and Interpretation in Quantitative Research I
EDU6191 - Methods and Interpretation of Quantitative Research II
EDU7190 - Qualitative Research: Perspectives and Approach
EDU7390 - Analysis and Interpretation of Multivariate Data in Education
EDU7293 - Non-Parametric Methods in Education
Master of Arts Human Kinetics (1994) - Thesis: Examining the categorical structure of the knowledge of expert coaches: A prototype theory of category structure applied to qualitative analysis

Doctorate Level Statistics Courses Taken:

EDU6494 - Measurement and Evaluation Practicum
EDU6193 - Measurement II: Techniques of Test Construction
EDU8292 - Analysis and Interpretation of Categorical Data in Education

University of Guelph — *Bachelors Degree*

1992

Bachelor of Arts in Psychology.

Analytics — *RStudio conf::2017*

Attended the 2017 RStudio conf::2017 analytics conference and completed the pre-conference Applied Machine Learning Workshop.

Software Development — *FileMaker*

Attended the 2014 FileMaker Developer Conference.

MCSD.NET Certification

Completed a 4-month training program at DevStudio in Edmonton and received MCSD.NET certification in 2004.