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Engineering & Scientific Consulting

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Professional Profile

Mr. DeVries is a Human Factors Managing Scientist at Exponent, and has previously held titles of User Experience Manager and Senior Researcher. In his over 30 years of combined experience, he has run and/or planned well over 250 studies and research engagements over a wide variety of research methods and across a wide variety of domains including consumer and business products, industrial equipment, medical equipment, warnings, measurement tools, higher education, telecom, military, and insurance.

Mr. DeVries designs and conducts user experience research across all phases of the product development lifecycle. He designs and conducts ideation and requirements studies and activities, usability tests, cognitive walk-throughs, participatory design and benchmarking research, competitive comparison, survey research, heuristic evaluation, process evaluation, concept validation, icon effectiveness, task and function prioritization, persona development, time on task studies, and focus groups. Mr. DeVries creates studies to ensure that business, product, design, engineering, and other immediate and future needs are considered, and applies findings to optimize user experience, reduce product usage errors and customer concerns, and identify new user requirements and business opportunities.

As a manager, Mr. DeVries helps product teams reach their business objectives through user-centered research by leading research efforts to meet those objectives, and defines strategies for implementing programs such as standardizing metrics, benchmarking, and process improvements. Mr. DeVries accomplishes this by working with various client functional groups, such as Product, Engineering, Marketing, Analytics, Accessibility, Customer Service, C-level management and IT to identify research needs, and then define the research program and deliverables. He has extensive experience conducting design research and working directly with design teams in traditional, agile, and hybrid product development lifecycles.

Mr. DeVries also designs and manages user experience/human factors labs, including:

- Centers for Scientific User Research (video: About CSUR) (website: (Exponent UX - User Experience Research, Strategy, and Consulting), with 6 lab suites covering over 6,000 square feet
- User Experience Center (UXC) at the John Sperling Center for Educational Innovation

Academic Credentials & Professional Honors

M.S., Psychology, University of Idaho, 1995

B.A., Psychology, University of North Texas, 1991

Prior Experience

Mr. DeVries has worked within several industries, including time as a Senior Researcher, User Experience Research Manager, and Usability Consultant. Mr. DeVries' more recent positions include:

- Interim UX Director, Research Manager, & Sr. Researcher, Apollo Education Group, 2011 - 2016
- UX Research Consultant, IBM and Physicians Mutual, 2010
- Human Factors Engineer, Sprint Nextel, 2000 - 2009
- UX Research Consultant, StorageTek and Intel, 2000
- UX Researcher, Loadstone Research, 1996 - 1999

Patents

US Patent 8,345,061: Enhancing viewability of information presented on a mobile device, January 1, 2013(Landry SJ, Lai HH, DeVries MJ, Schumaker C).

US Patent 7,304,678: Appliance and method for communicating and viewing multiple captured images, December 4, 2017 (Dow JC, Dalton DL, Rudd ML, Ruffatto KC, Formosa D, Nieves S, Hamburger P, DeVries MJ, Shepard N, Khovaylo M).

US Patent 7,133,162: Appliance and method of using same having a user help capability, November 7, 2006 (Dow JC, Dalton DL, Rudd ML, Ruffatto KC, Formosa D, Nieves S, Hamburger P, DeVries MJ, Shepard N).

US Patent 7,079,181: Appliance and method of using same having a delete capability for saved data, July 18, 2006 (US Patent 7,133,162: Appliance and method of using same having a user help capability, November 7, 2006 (Dow JC, Dalton DL, Rudd ML, Ruffatto KC, Formosa D, Nieves S, Hamburger P, DeVries MJ, Shepard N).

US Patent 7,038,717: Appliance and method for menu navigation, May 2, 2006 (Dow JC, Dalton DL, Rudd ML, Ruffatto KC, Formosa D, Nieves S, Hamburger P, DeVries MJ, Shepard N).

US Patent 6,995,875: Appliance and method for navigating among multiple captured images and functional menus, February 7, 2006 (Dow JC, Dalton DL, Rudd ML, Ruffatto KC, Formosa D, Nieves S, Hamburger P, DeVries MJ, Shepard N).

US Patent 6,972,792: Appliance and method for capturing images having a user error interface, December 6, 2005 (Dow JC, Dalton DL, Rudd ML, Ruffatto KC, Formosa D, Nieves S, Hamburger P, DeVries MJ, Shepard N).

US Patent 6,819,341: System and method of establishing communication between an appliance and an external device, November 16, 2004 (Dow JC, Dalton DL, Rudd ML, Ruffatto KC, Formosa D, Nieves S, Hamburger P, DeVries MJ, Shepard N).

US Patent 6,549,304: Scanning appliance and method having user help capability, April 15, 2003 (Dow JC, Dalton DL, Rudd ML, Ruffatto KC, Formosa D, Nieves S, Hamburger P, DeVries MJ, Shepard N).

US Patent 6,518,982: System and method of selecting pages that an appliance is sending, February 11, 2003 (Dow JC, Dalton DL, Rudd ML, Ruffatto KC, Formosa D, Nieves S, Hamburger P, DeVries MJ, Shepard N).

US Patent 6,469,689: Appliance and method of using same having a capability to graphically associate

and disassociate data with and from one another, October 22, 2002 (Dow JC, Dalton DL, Rudd ML, Ruffatto KC, Formosa D, Nieves S, Hamburger P, DeVries MJ, Shepard N).

US Patent 6,466,231: Appliance and method of using same for capturing images, October 15, 2002 (Dow JC, Dalton DL, Rudd ML, Ruffatto KC, Formosa D, Nieves S, Hamburger P, DeVries MJ, Shepard N).

US Patent 6,441,927: Appliance and method for viewing captured images, August 27, 2002 (Dow JC, Dalton DL, Rudd ML, Ruffatto KC, Formosa D, Nieves S, Hamburger P, DeVries MJ, Shepard N).

Publications

Conference Proceedings Publications

DeVries MJ, Gordon, SE. COG-C: A tool for estimating cognitive complexity and the need for cognitive task analysis. Proceedings of the Human Factors and Ergonomics Society 38th Annual Meeting 1994, p.943.

DeVries MJ, Gordon, SE. Estimating cognitive complexity and the need for cognitive task analysis. Proceedings of the Human Factors and Ergonomics Society 38th Annual Meeting, 1994, pp. 1023-1027.

Conference Presentations

DeVries MJ, Gordon, SE. COG-C: A tool for estimating cognitive complexity and the need for cognitive task analysis. Proceedings of the Human Factors and Ergonomics Society 38th Annual Meeting, 1994.

Project Experience

Mr. DeVries seeks to employ research methods and metrics that answer both the research questions and the business questions behind them. A sample of research efforts Mr. DeVries has designed and conducted include:

End user requirements gathering

- Facilitating ideation sessions resulting in product requirements and potential business opportunities
- Supporting formative and validation testing of medical devices and IFUs for design file history and FDA submission
- Integrating user insights and motion capture data in support of industrial equipment control optimization
- Observing and measuring product use to provide insights into new features, potential new products, and user tasks and preferences
- Collecting feature usability versus usefulness data in support of redesign prioritization

Icon/Warning evaluation method

- Evaluating icons that utilizes metrics such as task association and naming accuracy, and providing feedback such as icon design changes and user style preferences, utilized for online website design and warning label symbols

Help/Instructions evaluation

- Testing instruction manuals and other online and physical product help systems
- Transitioning expert installation processes into successful Do-It-Yourself manuals

Survey research

- Involving survey research in support of product development, customer insights, and litigation-based questions
- Identifying survey objectives in light of business needs, then identifying the questions, determining the analysis requirements, and designing, launching, and providing insights on the survey

Focus group research

- Planning, designing moderation guides to meet business and immediate research objectives, and executing the focus group research and reports
- Coordinating and running research with longitudinal advisory groups that meet regularly over the development of a product to provide end-to-end customer insights on product elements such as design, marketing, packaging, and customer support

Design research

- Including concept testing, prototype evaluation, iterative design research, usability testing, user acceptance testing, and post-launch design validation
- Constructing decision support journey maps that outline the user experiences, core and secondary journey tasks, task measures (e.g., task completion rates, usability, Net Promotor), which work together to identify actions needed at the resource management level needed to prioritize needed changes

Comparative & heuristic evaluations

- Designing and developing a task-based heuristic evaluation methodology that compares and scores similar task-based products. Heuristic evaluation scoring accounts for design problems, advances in designed experiences, and tasks not found among all products being compared. The method has been used successfully on several different products and could be applied to user task-based processes.
- Conducting cognitive walkthroughs, cognitive task analysis, task analysis, and standard heuristic evaluations, on products and websites

Out of the box testing

- Designing and conducting testing of user's initial experience with products, from package opening to first successful use

Integrated data research

- Designing and conducting studies that looked at the combination of data from user behavior, user survey data, and systems information to evaluate product usefulness and changes in user perceptions
- Designing and conducting studies that look at how usability measures (e.g., System Usability Score) and marketing measures (e.g., Net Promoter Score) change over time with changes in product design

Develop strategic decision support tools

- Identifying business metrics that support strategic decisions, and design and implement measurement activities that map user behaviors and system data onto the business metrics
- Conducting B2B research, such as SWOT and feature analysis, that provides companies with insights about marketing efforts, feature comparisons, and user journey comparisons

Aesthetics measurements

- Developing a method of evaluating product aesthetics and benchmarking them over time to identify user perceived improvements in aesthetics over time

Usability/Human Factors Labs: Design and Management

Mr. DeVries has designed and managed several usability labs. His lab designs account for business objectives, use scenarios, requirements obtained for end users (e.g., researchers, designers, product teams, clients, research participants, visitors), budget limitations, and Facilities processes. Examples include:

- 2018 – Continued design and buildout of the Exponent human factors lab into the Centers for Scientific User Research (CSUR), a 6,000 ft2 lab with 6 research suites, including a 46X29' vehicle bay lab, optometry measurement lab, remote viewing capability, motion capture lab, and room for clients that wish to be on site when the study is running
- 2016 – A human factors lab extension of the Exponent Technology and Engineering Center in Phoenix, AZ. The lab features two control and two participant rooms. The AV system is designed to support camera inputs from many sources, including wireless cameras and input from mobile device cameras and screens.
- 2011 – The high tech User Experience Center (UXC) at the Apollo Education Group's John Sperling Center for Educational Innovation in Tempe, AZ. The UXC features two labs, each comprising control, participant, and design rooms, as well as a focus group room. The lab sports a "see any camera view at any location" iPad-driven technology.
- 1997 – Usability lab/Focus Group center. The lab was designed to support movement of ceiling cameras to cover various viewing needs. The control/observation room was designed to support viewing through a two-way mirror as well as camera views. The participant room was designed to support a variety of scenarios, including a space large enough to support a focus group.