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Kofi Whitney, PhD

SUMMARY

A spirited UX researcher who passionately teams to find solutions that enable people to focus on their goals rather than their tools. Over 10 years of mixed-methods research experience in tech that spans smart home, virtual reality (VR), wearable computing, mobile and desktop computing.

EDUCATION

PhD in Human-Computer Interaction (2019)

Iowa State University of Science and Technology.

- Dissertation: *Taking the Lab on the Road and Bringing the Road to the Lab: On Using Mixed-Methods and Virtual Reality to Study a Location-Based Task*.
- GPA: 3.55.

B.S. in Computer Science (2004)

Benedict College (School of Honors).

- GPA: 3.60; Major GPA: 3.52.

EXPERIENCE

UX Researcher | Google | Atlanta, GA | July 2019 – Present

- Currently a research lead on the Nest UX "Dogfood" team; responsible for internal product research and testing that spans Google's smart home portfolio.
- Previously a research lead for smart home energy management HW & services portfolio; led generative and evaluative studies (pre/pandemic-era); launched Google's first thermostat after acquisition of Nest as well as novel services such as "HVAC Monitoring", which proactively notifies users of potential issues with their heating, ventilation and air conditioning systems.

Research Assistant | Iowa State University | Ames, IA | 2007 – 2012; 2017 – 2019*

* took sabbatical from 2012 – 2016

- Principal and co-investigator of mixed-methods research on the use of mobile computers and map-based tools to collect data in the field.
- Built a VR lab using a Cave Automatic Virtual Environment (CAVE) in order to replicate real-world field studies of mobile computing tasks; created a user interface to simulate walking within a 3D replica of a real-world neighborhood.
- Recreated the task environment—a large neighborhood—and simulated GPS using the following: Unity 3D, VR Juggler, SketchUp™, C++, C#, MySQL, PHP.

UX Engineer | VR Motion Corp. | Hillsboro, OR | June 2016 – May 2017

- Explored VR applications in automotive space with focus on professional & commercial driver training.
- Architected a high-fidelity driving simulator and driver training software platform that became core to IP portfolio, reducing overhead costs and dependency on 3rd-party solutions
- Designed and developed VR showroom and VR test drive experiences that were presented to key investors and customers; conducted iterative user testing and design.

Workshop Instructor | Oregon Story Board | Portland, OR | July 2016 – Sept. 2016

- Instructor and content creator for workshops on augmented reality and virtual reality.
- Introduced Oregon educators and students to virtual reality technologies.

UX Researcher | Intel Corporation | Hillsboro, OR | July 2012 – May 2016

- Led user research and concept development in virtual reality, wearable computing, gaming, wireless and next-gen computing hardware interfaces.
- Stood up a lab that addressed nascent UX research in VR; led user studies, requirements gathering, benchmarking and patent authorship efforts.
- Awarded Intel's first "Software Evangelist" position for virtual reality in 2016.

Graphics Validation Engnr. (intern) | Intel Corp. | Folsom, CA | May 2008 – Aug. 2008

- Added functionality to an automated test suite for Intel graphics hardware/software; rewrote various Microsoft DirectX SDK Sample Apps for inclusion in the test suite (Visual C++).
- Validated Intel hardware/software by analyzing the DirectX streams of various games and graphics applications; identified and escalated bugs to be fixed.

Web Developer (intern) | Intel Corporation | Chandler, AZ | May 2006 – Jul. 2007

- Developed 6+ websites using ASP.NET, ActionScript, PHP, HTML, CSS and Adobe software suite.
- Managed 300+ communication campaigns; designed raster/vector graphics utilized in emails, banners, wall murals and for display on site-wide plasma screens that were controlled in real-time.

Software Engnr. (intern) | Oak Ridge National Lab. | Oak Ridge, TN | Summer 2002 / '03

- ('03) Added functionality to a java applet that graphically displayed results of nuclear simulations within FORTRAN-generated HTML pages.
- ('02) Designed a UI that output nuclear simulation results to a user-friendly, HTML-based interface (upgrade from previously used text-based UI); extensively tested FORTRAN code and HTML output to validate various simulation configurations.
- Polished HTML output to balance performance, aesthetics and user-friendliness.
- Validated mission-critical code for incorporation into the Standardized Computer Analyses for Licensing Evaluation (SCALE) software package, which is used by nuclear scientists globally.

Research Assistant | Benedict College | Columbia, SC | Aug. 2002 – May 2003

- Researched threading and Message-Passing Interface (MPI), its applications in clustered computing and its strengths/weaknesses in performing complex math.

PUBLICATIONS

- Patanasakpinyo, T., Batinov, G., Whitney, K., Sulaiman, A., & Miller, L. (2019). Enhanced prediction models for predicting spatial visualization (VZ) in address verification task. In G. Lee & Y. Jin (Eds.), 34th International Conference on Computers and Their Applications (Vol. 58, pp. 247–256). https://doi.org/10.29007/V9G3.
- Patanasakpinyo, Thitivatr, Batinov, Georgi, Whitney, Kofi, Sulaiman, Adel, Miller, Les, Gilbert, S. (2018). *Extracting useful features for users with different levels of spatial visualization*. In 33rd International Conference on Computers and Their Applications (CATA) (pp. 86–91). Las Vegas, NV.

- Batinov, Georgi, Whitney, Kofi, Miller, Les. (2017). *Identifying workflow differences based on spatial ability*. Paper presented at the 31st International Conference on Computers and Their Applications (CATA), Las Vegas, NV, USA.
- Batinov, G., Rusch, M., Meng, T., Whitney, K., Patanasakpinyo, T., Miller, L., & Nusser, S. (2015). *Understanding map operations in location-based surveys*. In 8th International Conference on Advances in Computer-Human Interaction (pp. 144–149). Lisbon, Portugal.
- Batinov, G., Rusch, M., Meng, T., Whitney, K., Patanasakpinyo, T., Miller, L., & Nusser, S. (2015). *Understanding map operations in location-based surveys*. In 8th International Conference on Advances in Computer-Human Interaction (pp. 144-149). Lisbon, Portugal.
- Batinov, G., Whitney, K., Miller, L., Stanfill, B., & Ashenfelter, K. T. (2013). *Evaluating the impact of spatial ability in virtual and real world environments*. In 6th International Conference on Advances in Computer-Human Interactions (ACHI) (pp. 274–279). Nice, France.
- Rusch, M. L., Nusser, S. M., Miller, L., Batinov, G. I., & Whitney, K. C. (2012). *Spatial ability and map-based software applications*. Paper presented at the 5th International Conference on Advances in Computer-human Interactions, Valencia, Spain.
- Whitney, K. C., Batinov, G. I., Nusser, S. M., Miller, L. L., & Ashenfelter, K. T. (2011). *Exploring a map survey task's sensitivity to cognitive ability*. Paper presented at the 4th International Conference on Advances in Computer-human Interactions, Gosier, Guadeloupe, France.
- Batinov, G. I., Whitney, K. C., Nusser, S. M., Miller, L. L., & Ashenfelter, K. T. (2011). *Decision models for an address verification field task*. Paper presented at the 26th International Conference on Computers and Their Applications.
- Whitney, K. C., Batinov, G. I., Nusser, S. M., Miller, L. L., & Ashenfelter, K. T. (2010). *Understanding the user's approach toward location-based field tasks*. Paper presented at the 23rd International Conference on Computer Applications in Industry and Engineering, Las Vegas, NV, USA.
- Rearden, B. T., Fleckenstein, A. M., & Whitney, K. C. (2004). *Development of HTML formatted output for SCALE*. Paper presented at the 2004 American Nuclear Society Winter Meeting, Washington, DC.

PATENTS

- Vembar, D., Diefenbaugh, P., Somayazulu, V., Kuwahara, A., Whitney, K., Hicks, R. *Hybrid rendering for a wearable display attached to a tethered computer*. 2018. U.S. Patent 20180218543 filed Mar. 27, 2018, issued Aug. 2, 2018.
- Begum, Shamim, Whitney, Kofi C. *Ambient awareness in virtual reality*. 2017. U.S. Patent 20170173454 filed Dec. 22, 2015, issued June 22, 2017.
- Whitney, Kofi, Cianfrone, Joseph A., Banerjee, Rohit., Anderson, Glen J. *Shoe-based wearable interaction system*. 2016. U.S. Patent 20160093199 filed September 26, 2014, issued March 31, 2016.
- Durham, Lenitra M., Johnson, Andrea, Anderson, Glen J., Whitney, Kofi, Philbert, Lin, Cianfrone, Joseph A. 2016. *System and method for sensor prioritization*. U.S. Patent 20160088090 filed September 24, 2014, issued March 24, 2016.
- Whitney, Kofi C., Raffa, Guiseppe, Francis, Mark R., Idsinga, Andy S., Peek, Gregory A. 2015. *Gesture-based waking and control system for wearable devices*. 2015. U.S. Patent 20150185837 filed December 27, 2013, issued July 02, 2015.
- Esplin, A., Whitney, K., DiJulio, N., Oh, J., Baek, I., & Bush, I. (2015). *Mechanism for facilitating dynamic generation and transmission of canned responses on computing devices*. U.S. Patent 20150188861 filed December 26, 2013, issued July 2, 2015.