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| El Cerrito, CA  [jlhardyphd@gmail.com](mailto:jlhardyphd@gmail.com) | **Joe Hardy, MBA, PhD** | 415-691-0094  [linkedin.com/in/joehardy1/](https://www.linkedin.com/in/joehardy1/) |

**Data Oriented Product Leader**

Enterprising senior product leader with 20 years of experience, a PhD in cognitive psychology, and an MBA. Proven success leveraging technical expertise coupled with deep understanding of human and computer intelligence to drive strategy and vision for innovative products and experiences that delight users. Accomplished artificial intelligence (AI) and extended reality (XR) product innovator and skilled Python developer. Expertly communicates with, leads, and motivates high-performing cross-functional teams, including engineers, data scientists, and research scientists.

**Core Competencies**

Artificial Intelligence (AI) | Product Management | Product Strategy & Vision | Product Lifecycle Management

Virtual Reality | Product Design | User Research | User Testing | Data Science | Business Analysis | Corporate Strategy

Project Management | Software Development | Online Marketing | Global Team Leadership | Relationship Management

**Professional Experience**

**Co-Founder, Chief Science and Technology Officer | aNUma | 2019 to Present**

*Co-founded company to bring digital mental health and wellness products to people in virtual space. Collect and analyze behavioral and physiological data on participants undergoing artificial intelligence and virtual reality-based mental health and wellness experiences. Manage development of full technology stack.*

* **Co-established company from the ground up,** shaping product roadmap and business plans. Helped raise ~$2M.
* **Led development and production of high-performance, cloud-based, multiuser AI/VR platform** and efficacious AI/VR experiences supporting mental health and wellbeing, reaching thousands of users with high-levels of satisfaction.
* **Designed, developed, and managed successful clinical trial demonstrating benefits of *Clear Light,*** aNUma’s core product. Statistically significant improvements in 6 measures of wellbeing. Published in *Frontiers in VR.*
* **Developing AI software in Python to integrate with VR platform.** We are developing an Intelligent Social Facilitator AI agent that can facilitate therapeutic group-process sessions in our VR environment.

**Executive Director | Numadelic Labs Collective | 2023 to Present**

**Vice President, Product | Hear.com | 2018 to 2019**

*Led product team for North America, growing revenue from $20M to $40M per year. Managed creation of websites, digital ads, and other marketing technologies. Drove brand positioning and messaging across customer lifecycle. Directed front-end engineering, conversion rate optimization, customer relationship management, search engine optimization, design, and copywriting functions.*

* **Designed award-winning marketing campaign for global company,** creating ads, landing pages, and sales scripts that reduced customer acquisition costs by ~25%.
* **Developed machine learning-based lead-scoring algorithm** to improve sales and marketing efficiency.
* **Produced 20+ A/B tests,** realizing multiple improvements of 10% or more in acquisition efficiency.
* **Collaborated with and supported sales team to optimize and ensure consistent messaging** for sales funnel.

**Chief Product Officer | Viz.ai | 2016 to 2017**

*Drove product and solution development, including creation of company’s first product (app using Deep Learning AI to detect and alert specialists to potential strokes in patients’ CT scans). Designed and maintained product roadmaps and timelines. Shaped intellectual property (IP) strategy and submitted 3 patents. Led team of 2.*

* **Developed core product model using phone app as alarm or alert** and system for transmitting AI-marked images directly to relevant doctors. Success of basic product model helped raise $80M+ for company.
* **Defined and managed FDA strategy for organization,** presenting clinical performance evaluation plan to FDA, resulting in *De Novo* classification of company’s first product in just 6 months.

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**Chief Technology Officer | 18 Birdies | 2015 to 2016**

*Directed development of specialized software for golfers and golf courses, collaborating with customers to determine key features. Led creation of data analytics tools and conducted critical analysis of user behavior to optimize product and messaging. Interfaced with CEO to shape corporate strategy. Led team of 20+ engineers, product managers, and designers.*

* **Orchestrated development of 18Birdies app for iOS and Android** and BirdieCentral point-of-sale and inventory management system. Spearheaded mapping of 30,000 golf courses globally. Engaged hundreds of users in real-world product testing on golf course.
* **Oversaw customer-driven development process,** bringing product from concept to initial launch to 50,000 registered users.

**Vice President, R&D | Lumos Labs | 2009 to 2015**

*Drove development of core IP, including cognitive training games and assessments. Identified and cultivated strategic partnership opportunities to grow product offerings and market reach. Led team of up to 10 researchers and data scientists. Managed clinical trials performed by global network of scientific partners.*

* **Established, managed, and analyzed world’s largest database of human cognitive performance** with 2 billion+ performance records from 60 million+ users. Partnered with Google Research to develop new Bayesian approach to modeling learning curve.
* **Created 30+ cognitive training games** played by 70 million+ people worldwide.
* **Conducted largest randomized, controlled trial ever performed on human cognitive performance,** involving ~10,000 people globally. Published paper in top peer-reviewed journal.
* **Built collaboration network with 200+ research partners,** including experts from Harvard, Stanford, Columbia, and Berkeley, producing 13 peer-reviewed publications.

***EARLIER ROLES:***

**Director, R&D and New Products | Posit Science | 2004 to 2009**

**Post-Doctorate Research Fellow | UC Davis Medical Center – Ophthalmology Dept. | 2002 to 2004**

**Instructor, General Psychology Continuing Ed Course | UC, Berkeley Extension | 2002 to 2003**

**Instructor, Principles in Psychology | UC, Berkeley – Psychology Dept. | 2001**

**Graduate Student Researcher & Instructor | Vision Science and Psychology | 1997 to 2002**

**Education**

**MBA**

University of California, Berkeley

**PhD, Cognitive Psychology**

University of California, Berkeley

**BS, Psychology**

Brown University

**Technical Proficiencies**

Artificial Intelligence (AI) | Deep Learning | Machine Learning | Gradient Boosting Machines General

Linear Modeling | Linear Systems Analysis | Factor Analysis | Principal Components Analysis | Bayesian Statistics

Certified Scrum Master (Agile) | JIRA | Trello | Figma | Sketch

Python | R | MATLAB | Swift | Unity | C/Objective C/C# | SQL | noSQL Databases

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**Patents**

Roufa, G. J., Glowacki, D. R., Wall, J. M., & Hardy, J. L. . March 29, 2024. Method to Reduce Existential Distress and Prepare Families and Individuals for Death through Self-Transcendent Experiences Occasioned in Extended Reality. US Application #63/571,912.

Hinman, T., Katz, B., Hardy, J. L. & Drescher, D. September 2, 2014. System and Methods for Enhancing Cognition. US Patent #8,821,242.

Hardy, J. L., Mahncke, H. W., Wade, T. W. N-back exercise for cognitive training. April 2, 2013. US Patent #8,408,915.

Merzenich, M. M., Delahunt, P. B., Hardy, J. L., Lisberger, S. G. & Mahncke. July 10, 2012. Cognitive training using visual sweeps. US Patent #8,215,961.

Wade, T. W. & Hardy, J. L. A method for modulating listener attention toward synthetic formant transition cues in speech stimuli for training. July 2, 2012. US Patent #8,210,851.

Merzenich, M. M., Delahunt, P. B., Mahncke, H. W., Trujillo, M. S. & Hardy, J. L. June 26, 2012. Joystick for training to improve sensory-guided fine motor control of the hand. US Patent #8,206,156.

Delahunt, P. B., Hardy, J. L., Mahncke, H. W., Gangadhar S. June 12, 2012. Cognitive training using face-name associations. US Patent #8,197,258.

Hardy, J. L., Delahunt, P. B., Mahncke, H. W., Merzenich, M. M., & Richards, D. August 10, 2010. Visual emphasis for cognitive training exercises. US Patent #7,773,097.

Merzenich, M. M., Bird, D., Brenner, D. F., Chan, S. C., Delahunt, P. B., Hardy, J. L., Lisberger, S. G., & Mahncke, H. W. June 2, 2009. Cognitive training using guided eye movements. US Patent #7,540,615.

Delahunt, P.B., Ball, K., Brenner, D. F., Hardy, J. L., Mahncke, H. W. & Roenker, D. L. August 8, 2008. Visual Divided Attention Training. US Patent #8,348,671.

Goldman, D. M., Hardy, J. L., Mahncke, H. W., Merzenich, M. M. & Zimman, J. S. February 23, 2006. A method for enhancing memory and cognition in aging adults. International Patent WO/2006/019393.

**Selected Publications**

Kettner H, Glowacki DR, Wall J, Carhart-Harris RL, Roseman L and Hardy JL (2025). Observational cohort study of a group-based VR program to improve mental health and wellbeing in people with life-threatening illnesses. *Front. Virtual Real.*5:1466362. doi: 10.3389/frvir.2024.1466362.

Hardy, J. L., Werner, J. S., Regier, T., Kay, P., & Frederick, C. M. (2023). Sunlight exposure cannot explain “grue” languages. *Scientific Reports*, *13*(1), 1836. https://doi.org/10.1038/s41598-023-28280-1

Hardy, J. L., Nelson, R. A., Thomason, M. E., Sternberg, D. A., Katovich, K., Farzin, F., & Scanlon, M. (2015). Enhancing Cognitive Abilities with Comprehensive Training: A Large, Online, Randomized, Active-Controlled Trial. *PloS ONE*, 10(9), e0134467.

Morrison, G. E., Simone, C. M., Ng, N. F., & Hardy, J. L. (2015). Reliability and validity of the NeuroCognitive Performance Test, a web-based neuropsychological assessment. Frontiers in Psychology, 6. https://doi.org/10.3389/fpsyg.2015.01652

Donner, Y., & Hardy, J. L. (2015). Piecewise power laws in individual learning curves. *Psychon Bull Rev*. doi: 10.3758/s13423-015-0811-x.

Sternberg, D. A., Ballard, K., Hardy, J. L., Katz, B., Doraiswamy, P. M., & Scanlon, M. (2013). The largest human cognitive performance dataset reveals insights into the effects of lifestyle factors and aging. *Frontiers in Human Neuroscience*, 7, 292. doi:10.3389/fnhum.2013.00292.

Hardy, J. L., Drescher, D., Sarkar, K., Kellett, G., & Scanlon, M. (2011). Enhancing visual attention and working memory with a web-based cognitive training program. *Mensa Research Journal*, 42(2), 13-20.

Malania, M., Devinck, F., Knoblauch, K., Delahunt, P. B., Hardy, J. L., & Werner, J. S. (2011). Senescent changes in photopic spatial summation. *Journal of Vision*, 11(10). doi:10.1167/11.10.15.

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Spillmann, L., Hardy, J., Delahunt, P., Pinna, B., & Werner, J. S. (2010). Brightness enhancement seen through a tube. *Perception*, 39, 1504-1513.

Berry, A. S., Zanto, T. P., Clapp, W. C., Hardy, J. L., Delahunt, P. B., Mahncke, H. W., & Gazzaley, A. (2010). The Influence of Perceptual Training on Working Memory in Older Adults. *PLoS ONE*, 5(7), e11537. doi:10.1371/journal.pone.0011537.

Clark, C. L., Hardy, J. L., Volbrecht, V. J., & Werner, J. S. (2010). Scotopic spatiotemporal sensitivity differences between young and old adults. *Ophthalmic & Physiological Optics*, 30(4), 339–350. doi:10.1111/j.1475-1313.2010.00740.x.

Elliott, S. L., Choi, S. S., Doble, N., Hardy, J. L., Evans, J. W., & Werner, J. S. (2009). Role of high-order aberrations in senescent changes in spatial vision. *Journal of Vision*, 9(2):24, 1-16, http://journalofvision.org/9/2/24/, doi:10.1167/9.2.24.

Delahunt, P. B., Hardy, J. L., & Werner, J. S. (2008). The effect of senescence on orientation discrimination and mechanism tuning. *Journal of Vision*, 8(3):5, 1-9, http://journalofvision.org/8/3/5/, doi:10.1167/8.3.5.

Elliott, S. L., Hardy, J. L., Webster, M. A., & Werner, J. S. (2007). Aging and blur adaptation. Journal of Vision, 7(6):8, 1-9, http://journalofvision.org/7/6/8/, doi:10.1167/7.6.8.

Devinck, F., Delahunt, P. B., Hardy, J. L., Spillmann, L., & Werner, J. S. (2006). Spatial dependence of color assimilation by the watercolor effect. *Perception*, 35(4), 461-468.

Devinck, F., Hardy, J.L., Delahunt, P.B., Spillmann, L., & Werner, J.S. (2006). Illusory spreading of watercolor. *Journal of Vision*, 6, 625-633.

Hardy, J. L., Delahunt, P. B., & Werner, J. S. (2006). Visual psychophysics with adaptive optics. In J. Porter, A. Awwal, J. Lin, H. Queener & K. Thorn (Eds.), Adaptive Optics for Vision Science: Principles, Practices, Design and Applications. New York: Wiley.

Mahncke, H.W., Connor, B.B., Appelman, J., Ahsanuddin, O.N., Hardy, J.L., Wood, R.A., Joyce, N.M., Boniske, T., Atkins, S.M., & Merzenich, M.M. (2006). Memory enhancement in healthy older adults using a brain plasticity-based training program: A randomized, controlled study. Proceedings of the National Academy of Sciences, USA, 103 (33), 12523-12528.

Choi, S., Doble, N., Hardy, J.L., Jones, S., Keltner, J.L., Olivier, S., & Werner, J.S. (2006). In vivo imaging of the photoreceptor mosaic in retinal dystrophies and correlations with visual function. *Investigative Ophthalmology & Visual Science*,47 (5), 2080-2092.

Hardy, J.L., Frederick, C.M., Kay, P., & Werner, J.S. (2005). Color naming, lens aging, and grue: what the optics of the aging eye can teach us about color language. *Psychological Science*, 16 (4), 321-327.

Hardy, J.L., Delahunt, P.B., Okajima, K., & Werner, J.S. (2005). Senescence of spatial chromatic contrast sensitivity. I. Detection under conditions controlling for optical factors. *Journal of the Optical Society of America*, A, 22 (1), 49-59.

Delahunt, P.B., Hardy, J.L., Okajima, K., & Werner, J.S. (2005). Senescence of spatial chromatic contrast sensitivity. II. Matching under natural viewing conditions. *Journal of the Optical Society of America*, A, 22 (1), 60-67.

Yamashita, J.A., Hardy, J.L., De Valois, K.K., & Webster, M.A. (2005). Stimulus selectivity of figural aftereffects for faces. *Journal of Experimental Psychology, Human Perception and Perform*, 31 (3), 420-437

Devinck, F., Delahunt, P.B., Hardy, J.L., Spillmann, L., & Werner, J.S. (2005). The watercolor effect: quantitative evidence for luminance-dependent mechanisms of long-range color assimilation. *Vision Research*, 45 (11), 1413-1424.

Werner, J. S., Delahunt, P. B., & Hardy, J. L. (2004). Chromatic-spatial vision of the aging eye. Optical Review, 11(4): 226-234.

Awwal, A., Baumann, B., Gavel, D., Olivier, S., Jones, S., Silva, D., Hardy, J.L., Barnes, T. & Werner, J.S. (2003) Characterization and operation of a liquid crystal adaptive optics phoropter. Proceedings of SPIE, R. Tyson, & M. Loyd-Hart (Eds.) Astronomical Adaptive Optics Systems and Applications, 5169, 104-122.

Takeuchi, T., De Valois, K. K. and Hardy, J. L. (2003). The influence of color on the perception of luminance motion. *Vision Research*, 43(10): 1159-75.

Hardy, J. L. and De Valois, K. K. (2002). Color-selective analysis of luminance-varying stimuli. *Vision Research*, 42, 1941-1951.

Hardy, J. L. (2002). Color-selective luminance encoding. Dissertation, University of California, Berkeley. June 2002.