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## Deep Lens

### About Simon Arkell

- He is the co-founder of 7 companies including Deep Lens and Predixion

### **Personal Life**

- Born July 1, 1966 (52 years old)
- Came to the US in 19786 from Australia on a pole vaulting (棒高跳び) scholarship
- Represented Australia in the World Championship, World Cups, and Olympic Games from 1986-1996
- Holds the world record for left handed pole vaulters since 1995
- In 1996, he retired from this world

### **Education**

- Bachelor of Arts in Economics – University of Adelaide (only there for 1 year until he went to the US for a sports scholarship)
- Bachelor of Arts in Economics – The University of New Mexico (1986-1991)
- MBA – Cal Poly (SLO) (1992-1994)

### **Experience**

- *2018-Now* President and Co-Fdounder of Deep Lens
  - An AI company focused on accelerating the use of digital pathology to help match cancer patients to life saving available clinical trials
  - Currently based by investors and VCs such as Sierra Ventures, Rev1 Ventures, and Tamarind Hill Fund
  - Has an exclusive license to a cutting edge digital pathology platform from the largest pediatric oncology research institution in the US
  - Deep Lens is adding AI-powered image detection and workflow support, telepathology, cloud storage, and built-in APIs for integration by hardware and software vendors and biopharma companies
  - This platform is being used by hundreds of pathologists from more than 65 major institutions in 8 countries
- *2017-2018 (8mos)* Consultant/Interim Chief Strategy Officer at ClearStory Data
  - A big data analytics company with an end-to-end, cloud based , in-memoru solution that uses machine learning to automatically blend data and provide insights to large enterprise customers globally
  - Based by some of the best venture funds such as Kleiner Perkins Caufield Byers, Adnreesse Horowitz, Google Ventures etc.
- *2016-20177 (11mos)* General Manager of Software Platforms and Analytics at Greenwave Systems Inc.

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- *2009-2016 (7 years)* Founder and CEO of Predixion Software Inc
  - Predixion Software – a venture backed predictive analytics company that raised over \$40M from major VCs and investors before it was acquired by Greenwave Systems in 2016
- *2009-2010 (10 mos)* Operating Partner at Triton Pacific Capital Partners
  - Focused on growth equity investments and buyouts of mid sized US companies
  - Also served as an advisor to Triton's portfolio companies (Custom Credit Systems and DB Technology) on strategic market entry and partnership opportunities
- *2002-2005 (3 years 4 mos)* Principal at Gramercy Venture Advisors
  - Ran the Orange County Office and worked with US and Australian tech companies with VC fund raising, trade sale, and US market entry work
- *1998-2001 (3 years)* Co-founded Versifi as a spin out from GDI and served as VP Business Development
  - Sold company to Reef (Belgium) in 2000 for US\$48M
- *1997-1998 (1 year)* VP Internet Services at GDI
- *1995-1996 (1 year 8 mos)* Co-founder and General Manager of Telephone Network Connections (an Australian switchless reseller and consultancy)
  - Sold company to LCR Telecom (UK) in 1996

### **Committees/Organizations**

- He currently serves on the President's Council of Advisors and the Dean's Advisory Council for the Orfalea School of Business at Cal Poly, San Luis Obispo since May 2015
  - Mentors startups at the Cal Poly Center for Innovation and Entrepreneurship (CIE)
- Member of the Digital Pathology Association since July 2018

### **Honors and Awards**

- CEO of the Year- Mid Sized Companies (Oct 2015)

### **Publications**

- Co-wrote an article with Jeff Elton, MD for Lifesciences and Predictive Health at Accenture <https://hbr.org/2014/10/create-a-strategy-that-anticipates-and-learns>
  - The article talks about how although there is a lot of talk around using predictive tools to analyze big data but people are missing out on an even bigger opportunity: managers can use digital technology to acquire and assess the information for real-time strategic decision making
  - It is increasingly important for business leaders to predict and influence what will come next
  - Data analysis can help us crunch key factors and connect insight and strategy faster than ever

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- Machine learning tools can be used to reveal meaningful patterns and highlight gaps in markets → this can identify opportunities for new business partnerships
- It will become more important for business leaders to invest in enabling data infrastructure and advance analytics, embed predictive approaches throughout the organization, move the company's focus to planning and coordination that is analytics-driven
- Some companies are beginning to do this like Amazon – analyzes pools of data to predict who their customers are and what they will buy next to drive strategic plans for new devices and service offerings

### **Volunteer Work**

- He is the Co-founder and MC of the “Megan’s Wings Gala” that raises money for families of children diagnosed with cancer
- Since Dec 2018 he has been volunteering at the J.F. Shea Therapeutic Riding Center and encourages people to donate to the cause
  - This is a center that kids therapy through horse back riding

### **Conferences**

- Will be attending a conference on April 23, 2019 in Cambridge, MA that focuses on discussing uses of AI for clinical trial recruitment and translational research <https://www.linkedin.com/pulse/ai-machine-learning-clinical-trials-fda-formally-weighs-lavender/>
- Simons will be presenting The Cal Poly Center for Innovation and Entrepreneurship’s annual Spring Entrepreneurship Forum on May 14, 2019
  - He will be discussing the ever-increasing role of AI in the startup world
- The Deep Lens executive team was at JPMorgan Chase & Co.’s 37<sup>th</sup> annual Healthcare Conference in San Francisco from Jan 7-9, 2019

### **Connections**

- Margaretta Colangelo – Managing Partner at Deep Knowledge Ventures personally congratulated Simon on LinkedIn when he posted the news about their Series A funding <https://www.linkedin.com/in/margarettacolangelo/>
- Simon often likes posts by Jeff Elton – Chief Executive Officer at Concerto Health AI <https://www.linkedin.com/in/jelton/detail/background-image/>
- Tom Walker – CEO of Rev1 Ventures wrote an article congratulating Deep Lens for their success <https://www.linkedin.com/pulse/rev1-portfolio-company-deep-lens-sees-impressive-growth-tom-walker/>

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### Twitter Activity

- On Dec 2 2018, Simon tweeted that Deep Lens made the list of top healthcare AI companies
- Shared this as a great article <https://www.cio.com/article/3305951/the-promise-of-artificial-intelligence-in-diagnosing-illness.html> - an article that he and his co-founder are featured in
  - The article talks about the capability that AI has in precisely diagnosing illnesses
  - This realization has led Med schools are now offering courses in technology infrastructure, deep learning, and data management alongside biology classes
  - AI can identify a cancer, feed new models, and help researchers quickly qualify clinical trial participants
- In Sep 2018 tweeted that Deep Lens is hardware and software players in the digital pathology space
  - Says that edge computing is vital for local processing of image intensive AI deep learning models
  - Linked this: <https://blogs.nvidia.com/blog/2018/09/12/nvidia-clara-platform/?ncid=so-ele-nrcmtghrtglsx3-58501>
    - NVIDIA Clara platform – a combination of hardware and software that brings AI to the next generation of medical instruments as a powerful tool for early detection, diagnosis, and treatment of diseases
- Tweeted how digital pathology is not a thing in India because scanners cost too much and instead, pathologists take photos with their iPhone down the eye piece of a microscope and share it on Facebook to crowdsource opinions on cancer
- Most of his activity on twitter is about digital pathology, deep learning, AI, and pole vaulting
- Congratulated ClearStory Data (<http://www.clearstorydata.com>) on their Series C funding announcement
- Often shares and retweets about ClearStory on twitter

### About Deep Lens

- The company uses a platform called VIPER (Virtual Imaging for Pathology Education and Research) which combines deep learning technology with pathology workflows to facilitate patient identification for clinical trials
- Software aims to help peer-to-peer collaboration and clinical research pathologists flag patients who are eligible for a clinical trial at the time of diagnosis → fast-track trial
- Their aim is to provide users with fast and accurate information + expert consultation for better patient care and advanced clinical research
- By digitizing and modernizing pathology through whole slide imaging and AI, Deep Lens is accelerating the identification of complex disease sub-types in real time
- Deep Lens VIPER uses deep learning methods to help identify and match patients to available clinical trials sooner than any other method
- VIPER was originally developed for research purposes in one of the largest pediatric oncology facilities (Nationwide Children's Hospital) in Columbus, Ohio

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- VIPER was built by expert pathology groups around the world that focused on specific tumor types and subtypes
- Nationwide Children's Hospital facilitated the research project
- It was used as the platform for global oncology studies including the Cancer Genome Atlas Project
- It was then commercialized by Deep Lens
- Leads to the right patient at the right time
- Benefits of VIPER = speed, accuracy, collaboration, earlier detection, and matching patients with clinical trials
  - Speed – If you send in slides overnight or uploading images to VIPER, you will find your images in your free version of VIPER ready for use
  - Accuracy – VIPER will provide insight by matching the case with other similar cancers → leads to predictive, precision, personalized medicine
  - Collaboration – VIPER has email capabilities for immediate collaboration with colleagues
    - Can ask others for second opinions or crowd source opinions
    - They are also working to add a feature where you can quickly find experts who can read your case
  - Earlier Detection – improved accuracy with AI collaboration with other pathologists around the world for second opinions leads to earlier detection and treatment
  - Matching patients with Clinical Trials – one of the big challenges still with getting a drug to market = complexity of the multiple phases of clinical trials
    - Patients and oncologists are frustrated by the complexity of identifying the right trials for the patients and getting the patient to access the trial as soon as possible
    - Soon VIPER users will be able to match cases to available trials and check for patient eligibility to speed up access for the patient
- Deep Lens charges institutions and companies a subscription fee but its free for individual pathologists and pathology groups
- Competitors: PathAI, Inspirata, and Proscia
- But unlike competitors, Deep Learning is targeting hospitals, clinics, AND pharmaceutical companies
- Deep Lens has a Webinar that people can sign up for:  
[https://register.gotowebinar.com/register/4556798791218777089?utm\\_campaign=Webinar:%20AI%20and%20the%20future%20of%20integrated%20Digital%20Pathology%20workflows&utm\\_content=76886570&utm\\_medium=social&utm\\_source=linkedin](https://register.gotowebinar.com/register/4556798791218777089?utm_campaign=Webinar:%20AI%20and%20the%20future%20of%20integrated%20Digital%20Pathology%20workflows&utm_content=76886570&utm_medium=social&utm_source=linkedin)
  - Talks about AI and the future of digital pathology workflows

April 9 2019 – Deep Lens raises \$14M for Ai-powered clinical trial recruitment

[https://www.itnonline.com/content/deep-lens-closes-series-financing-digital-ai-pathology-platform?utm\\_content=89120660&utm\\_medium=social&utm\\_source=linkedin&hss\\_channel=lis-kuA0\\_KRHNV](https://www.itnonline.com/content/deep-lens-closes-series-financing-digital-ai-pathology-platform?utm_content=89120660&utm_medium=social&utm_source=linkedin&hss_channel=lis-kuA0_KRHNV)

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- The company receives \$14M in Series A funding to expand its AI platform (Viper) for recruiting clinical trial participants
- Money will be used to further expand the company's AI and platform product development activities
- Financing was led by Northpond Ventures
  - Other investors: Rev1 Ventures, Sierra Ventures, and Tamarind-Hill Partners
- This round comes only 3 months after Deep Lens closed its VC-led seed equity round
- Total funding to date = \$17.5M

March 7, 2019 – Worldwide Clinical Trials and Deep Lens Enter Strategic Alliance to Accelerate Recruitment and Development Timelines for Oncology Trials

- Worldwide Clinical Trials Inc. = an award-winning, full-service, midsize, global CRO
- The two companies will pair Worldwide's expertise in clinical cancer research and global clinical trial operations with the Deep Lens VIPER platform
  - This will support a platform for sponsors, researchers, and care teams to accelerate cancer diagnoses

October 12, 2018 – Deep Lens raises \$3.2 million for AI cloud pathology platform

<https://venturebeat.com/2018/10/12/deep-lens-raises-3-2-million-for-ai-cloud-pathology-platform/>

- Dave Billiter is an graduate of Ohio Northern University and Columbus Southern Univeristy who joined Nationwide Children's Hospital in 2004, where he led the health system's informatics efforts → he oversaw the creation of what is now known as VIPER
- Billiter teamed up with Simon Arkell to launch Deep Lens
- In October 2018, the company received \$3.2M seed funding round led by Sierra Ventures, Rev1 Ventures, and Tamarind-Hill Fund.