Victor Dibia

http://www.victordibia.com

Focus: AI Agents, Developer Tools, Human-AI Interaction

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EXPERIENCE

- **Microsoft Core AI** — Santa Clara, California
  Principal Research Software Engineer (AI Agents) — *May 2025 - Present*
  - **Developer Tools & Frameworks**: Core contributor for Microsoft Agent Framework (5.9K GitHub stars), a unification of Semantic Kernel and AutoGen. Built DevUI (470K+ downloads), the primary testing and debugging interface for the framework. Authored middleware/guardrails design that defines interception points for function, tool, and agent calls across the SDK. Created onboarding tutorials to accelerate engineer ramp-up on the codebase.

  - **Cross-Functional Technical Direction**: Advised UI direction across 3 product surfaces: Agent Framework OSS, VSCode Extension, Azure Foundry. Design patterns influenced Microsoft Foundry workflow UI - debuted at Ignite 2025. Delivered high-fidelity prototypes for executive demos on rapid timelines.
  - **Standards & External Engagement**: DRI for internal MCP standards and adoption. Co-authored external documentation on agent-to-agent communication via MCP. Contributed to MCP SEP proposal process. Work featured at Microsoft Build and Ignite 2025. Delivered MCP Dev Days talk.

- **Microsoft Research - AI Frontiers Lab** — Sunnyvale, California
  Principal Research Software Engineer (Generative AI) — *October 2021 - May 2025*
  - **Multi-Agent Systems**: Core developer for AutoGen, helping grow it to 52K+ GitHub stars and 5.9M+ downloads. Shepherded merger with Semantic Kernel into Microsoft Agent Framework, which powers the Azure Foundry Agent Service. Co-authored Magentic-One, an industry reference architecture for autonomous multi-agent systems. Created AutoGen Studio (634K+ downloads), a low-code tool for building multi-agent workflows (EMNLP 2024).
  - **Generative AI for Visualization**: Created LIDA (3.2K GitHub stars), an automated visualization framework using LLMs. Shepherded research-to-product transfer: approaches adopted by Excel, Fabric, PowerBI teams and Project Sophia.
  - **GitHub Copilot**: Proposed and implemented evaluation metrics used to select candidate Copilot models for production. Published research on human factors in AI pair programming (arXiv).

- **Cloudera Fast Forward Labs** — New York City / Palo Alto
  Principal Research Engineer (Machine Learning) — *Jan 2019 - September 2021*
  - **Applied ML Research**: Led research reports on Deep Learning for Question Answering, Anomaly Detection, and Image Analysis. Built NeuralQA, an extractive QA library using BERT.
  - **Core Product Engineering**: Led development of Applied ML Prototypes (AMPs) for Cloudera Machine Learning, including the one-click deploy interface for the AMP catalog. Became the standard tool for customer onboarding and demonstrations.

- **IBM Research** — Yorktown Heights, New York
  Research Staff Member — *April 2016 - Jan 2019*
  - **AI for Visualization**: Created Data2Vis, the first and most cited neural network approach to automatic data visualization generation (IEEE CG&A Best Paper 2019, IEEE VIS Best Paper Honorable Mention 2018).
  - **Democratizing AI**: Co-created TJBot, an open-source DIY AI kit adopted by 8,000+ users for classroom teaching, maker spaces, and corporate training.

EDUCATION

- **City University of Hong Kong** — Kowloon Tong, Hong Kong
  PhD in Information Systems (Quantitative User Behaviour, HCI) — *Aug. 2012 – April. 2016*

- **Carnegie Mellon University** — Pittsburgh, USA
  MSc Information Networking; CGPA 3.67/4.0 — *Aug. 2009 – May. 2011*

Programming Skills

- **Languages/Frameworks:** Python, TypeScript/JavaScript, React, Node.js   **AI/ML:** LLMs, Multi-Agent Systems, PyTorch

- **Open Source:** AutoGen (52K stars), LIDA (3.2K stars), Agent Framework (5.9K stars), Handtrack.js (2.9K stars)

Publications

- **Selected Papers (Recent):**
  - **Victor Dibia** (2025). *AI Fatigue: Reflections on the Human Side of AI's Rapid Advancement.* **Communications of the ACM**. doi.org/10.1145/3734515
  - Will Epperson, Gagan Bansal, **Victor Dibia**, et al. (2025). *Interactive Debugging and Steering of Multi-Agent AI Systems.* **CHI 2025**.
  - Hussein Mozannar, Gagan Bansal, **Victor Dibia**, et al. (2025). *Magentic-UI: Towards Human-in-the-loop Agentic Systems.* arXiv:2507.22358.
  - Emmanuel Boateng, [...], **Victor Dibia** (2025). *Concept Distillation from Strong to Weak Models via Hypotheses-to-Theories Prompting.* **NAACL 2025**.
  - Adam Fourney, Gagan Bansal, **Victor Dibia**, et al. (2024). *Magentic-One: A Generalist Multi-Agent System for Solving Complex Tasks.* MSR-TR-2024-47.
  - Gagan Bansal, [...], **Victor Dibia**, et al. (2024). *Challenges in Human-Agent Communication.* arXiv:2412.10380.
  - Jeevana Priya Inala, [...], **Victor Dibia**, et al. (2024). *Data Analysis in the Era of Generative AI.* arXiv:2409.18475.
  - **Victor Dibia**, Jingya Chen, et al. (2024). *AutoGen Studio: A No-Code Developer Tool for Building and Debugging Multi-Agent Systems.* **EMNLP 2024**.
  - Corby Rosset, Guoqing Zheng, **Victor Dibia**, et al. (2023). *Axiomatic Preference Modeling for Longform Question Answering.* **EMNLP 2023**.
  - **Victor Dibia** (2023). *LIDA: A Tool for Automatic Generation of Grammar-Agnostic Visualizations and Infographics using Large Language Models.* ACL 2023.

- **Selected Papers (Awards):**
  - **Victor Dibia**, Çağatay Demiralp (2019). *Data2Vis: Automatic Generation of Data Visualizations Using Sequence-to-Sequence Recurrent Neural Networks.* **IEEE CG&A** [Best Paper Award]. First and most cited neural approach to automated visualization.
  - **Victor Dibia**, Çağatay Demiralp (2018). *Data2Vis.* **IEEE VIS 2018** [Best Paper Honorable Mention].
  - Jeffrey Kephart, **Victor Dibia**, et al. (2018). *A Cognitive Assistant for Visualizing and Analyzing Exoplanets.* **AAAI 2018** [Best Demo Award].

- **Selected Papers (Other):**
  - **Victor Dibia** (2020). *NeuralQA: A Usable Library for Question Answering on Large Datasets.* **EMNLP 2020**.
  - **Victor Dibia**, Maryam Ashoori, et al. (2017). *TJBot: An Open Source DIY Cardboard Robot for Programming Cognitive Systems.* **CHI 2017**.
  - **Victor Dibia** (2016). *FOQUS: A Smartwatch Application for Individuals with ADHD.* **ASSETS 2016**.

Awards and Honors

- **Book**
  - [2024] *Designing Multi-Agent Systems* - Amazon Best Seller, #1 New Release in AI category. 398-page practical guide on AI agent design, building, and evaluation.

- **Academic Honors**
  - [2020] Best Paper Award, IEEE Computer Graphics & Applications (Data2Vis).
  - [2018] Best Paper Honorable Mention, IEEE VIS Symposium on Visualization in Data Science.
  - [2018] Best Technical Demonstration, AAAI Conference on Artificial Intelligence.
  - [2018] Heidelberg Laureate Forum (1 of 200 young researchers invited).

- **Industry Honors**
  - [2019] Grand Prize Winner, #BuiltWithTensorflow challenge (Handtrack.js).
  - [2018] Invited speaker, TensorFlow Summit (2018, 2019).
  - [2017] IBM Open Source Award.

- **Granted Patents**
  - Saleema Amershi, Adam Fourney, **Victor Dibia**, Gagan Bansal (2025). *Embedded Attributes for Modifying Behaviors of Generative AI Systems*. **US Patent 12,423,338**.
  - **Victor Dibia**, Adam Fourney, Forough Poursabzi-Sangdeh, Saleema Amershi (2024). *Coding activity task (CAT) evaluation for source code generators*. **US Patent 12,254,293**.
  - **Victor Dibia**, Rachel K.E. Bellamy (2018). *Using ultraviolet sensor data to determine a pseudo location of a user*. **US Patent 10,066,987**.

- **Filed Applications**
  - Emmanuel Boateng, **Victor Dibia**, et al. (2025). *Using large generative models to improve the performance of weak language models*. **US Patent App. 2025/0348745A1**.
  - **Victor Dibia**, Chenglong Wang, Bongshin Lee, Jeevana Priya Inala, John Thompson (2025). *Data Health Evaluation Using Generative Language Models*. **US Patent App. 2025/0110934A1**.
  - **Victor Dibia** (2024). *Automated generation of data visualizations and infographics using large language models and diffusion models*. **US Patent App. 2024/0185490A1**.
  - Sushil Thomas, Jeanne Schaser, [...], **Victor Dibia**, [...], Ofek Gila (2023). *Applied machine learning prototypes for hybrid cloud data platform and approaches to developing, personalizing, and implementing the same*. **US Patent App. 2023/0267377A1**.
  - **Victor Dibia**, Rachel K.E. Bellamy (2019). *Automated summarization based on physiological data*. **US Patent App. 15/424,997**.
  - **Victor Dibia** (2019). *Detecting Human Input Activity In a Cognitive Environment Using Wearable Inertia and Audio Sensors*. **US Patent App. 15/817,663**.

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