## **ACADEMIC PROGRAM**

### Objective

To establish a comprehensive academic program that promotes the integration and adoption of the next generation of kdb+ and related KX technologies within university curricula and research. This initiative empowers students and faculty with the tools to build real-time, AI-driven solutions across industries-cultivating a new generation of innovators fluent in temporal analytics, intuitive intelligence, and high-performance computing.

### **Vision and Goals**

**Vision:** Enable leading academic institutions to become launchpads for real-time, Al-first education and research. From lecture halls to labs, students will gain hands-on experience with the infrastructure powering the world's most advanced decision-making systems.

#### Goals:

- Integrate next-gen kdb+ into the curricula of top-tier programs globally
- Equip students with future-proof, industry-validated skills.
- Support research in AI, time-series analytics, and autonomous systems
- Establish strategic partnerships with leading institutions to promote innovation.
- Create a robust talent pipeline for capital markets, life sciences, aerospace, defense, and IIoT
- Partner with faculty to co-develop and co-publish cutting-edge educational and research materials

### **Program Components**

#### **Free Software Access**

**Licenses:** Expanded free-tier licenses to students and faculty, ensuring barrier-free access for educational and research purposes.

#### **Curriculum Integration**

**Foundational Topics:** Introduction to kdb+, architecture guidance, columnar design, and time-series advantages.

**Programming:** Instruction on the q language, qSQL, and PyKX, functional programming paradigms, and optimized syntax for analytical performance.

**Optimization Techniques:** Guidance on working with large-scale datasets, query efficiency, and real-time performance.

**Industry Applications:** Use case studies from various industries such as trade analytics, quant research, defense intelligence, autonomous systems, and more.

**Advanced Modules:** Topics such as AI similiarity search, streaming analytics, partitioned databases, and process optimization.

**Educational Materials:** Open access to KX Academy online content to offer a structured and high-quality curriculum.

**Custom Pathways:** Develop academic-aligned learning tracks to integrate with course syllabi and research objectives.

**Pre-Built Resources:** Emphasize the availability of ready-to-use coursework to facilitate rapid program adoption.

# **KX** ACADEMIC PROGRAM

### Program Components (cont'd)

#### **Research and Innovation Support**

Data Access: Provide curated datasets to support empirical research and instruction.

**Recognition:** Acknowledge outstanding student and faculty contributions through awards and global promotion.

#### **Community Building**

Student Ambassadors: Identify and mentor student leaders to champion the program on campus.

User Groups: Encourage the formation of kdb+ clubs and academic user forums.

Academic Events: Host hackathons, workshops, and guest lectures to build enthusiasm and engagement.

#### **Educator Enablement**

**Faculty Training:** Provide targeted onboarding and professional development for educators and teaching assistants.

**Dedicated Support:** Establish a help desk to offer technical and academic assistance.

**Collaborative Development:** Partner with faculty to co-design course materials and co-author publications or research.

### What Sets KX Technology Apart?

kdb+ isn't just fast-it's built from the ground up for **time-oriented AI and analytics**:

- **Optimized Query:** Columnar design with lock-free execution and high-performance array algorithms
- Compute Efficient: <800KB memory footprint leverages CPU caches up to 100x faster than RAM
- **Parallel & Distributed:** Native support for vectorization, parallel computation, and map-reduce operations
- Speed & Scalability: Unified real-time and historical analytics with zero conversion overhead
- Optimized for Time: Nanosecond precision, universal IDs, and time-based joins as first-class citizens
- Language & Ecosystem: High-performance q plus Python, SQL, Java, C++, R, Rust, and open-source integration
- AI-Ready: Powers GenAl and ML by combining time-series data, vector embeddings, and streaming in one platform

This architecture makes kdb+ the world's most powerful engine for real-time, Al-ready thinking-ideal for students and researchers solving tomorrow's hardest problems.

# **ACADEMIC PROGRAM**

### Shape the Future! Get Involved Today!

KX is launching this collaborative Academic Program to bring the power of KX Technology into university classrooms and research labs around the globe. This initiative will empower educators and students alike with cutting-edge tools for real-time analytics, enabling deeper insights, more dynamic learning experiences, and impactful research across disciplines.

We're targeting an initial launch in June 2025, and we're inviting professors, lecturers, and academic researchers to join us early in shaping the program. Your insights will help us tailor resources, curriculum pathways, and research support to best meet the needs of your institution and your students.

### Why Get Involved?

- Influence the direction of a global academic initiative
- Access early resources and pilot materials
- Collaborate directly with our education and engineering teams
- Prepare your students with in-demand, market-ready skills
- Join a growing network of pioneering educators in data and analytics

If you're passionate about bringing industry-grade technology into the classroom-and being part of the next wave of academic innovation-we'd love to hear from you.

Connect with us via email at DevRel@kx.com