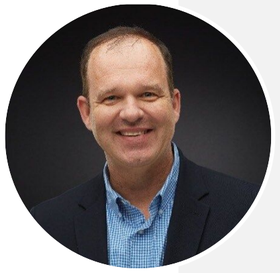
DIGITAL MEDICINE SOCIETY

Increasing software innovation in digital health products through unified cross architecture programming

February 1, 2023 11:30AM-12:30PM ET

Beenish Zia
Chief Architect for Medical Imaging, **Intel Corporation**



David Blackman
Executive Director Digital Trials Strategy, **Oracle**

Moderator: Sarah Valentine
Partnerships Manager, **Digital Medicine Society**

Our purpose

DiMe is a global non-profit dedicated to advancing the **ethical**, **effective**, **equitable**, and **safe** use of digital medicine to redefine healthcare and improve lives.

Source: https://www.dimesociety.org/index.php/about-us-main

We launched in May 2019…

CISION
PR Newswire

Digital Medicine Society Now Accepting Members

New nonprofit aims to advance digital medicine to optimize human health

DIGITAL MEDICINE SOCIETY

NEWS PROVIDED BY
Digital Medicine Society (DiMe) →
May 14, 2019, 01:53 ET

BOSTON, May 14, 2019 /PRNewswire/ -- The Digital Medicine Society (DiMe), a Massachusetts nonprofit corporation with 501(c)(3) application pending, has launched.

STAT Topics Opinion Podcast Video Newsletters Events Log I

FIRST OPINION

DiMe: Calling all who serve in digital medicine

By JEN GOLDSACK, BEAU WOODS, *and* ERIC PERAKSLIS / JUNE 5, 2019

Source:https://www.prnewswire.com/news-releases/digital-medicine-society-now-accepting-members-300848402.html and https://www.statnews.com/2019/06/05/new-digital-medicine-society/

… and sit at the intersection of two communities

Source: https://www.dimesociety.org/index.php/about-us-main

We deliver clinical quality work on a tech timeline

New knowledge & capabilities in the field spark new collaboration opportunities

Communication & Education

Resources & publications generated by DiMe are shared through open-source channels & educations programs, & used by stakeholders across the field to advance digital medicine.

Community

DiMe partners & experts from across tech & healthcare unite to improve health & healthcare through digital medicine.

Actionable, evidence-based resources

Greatest challenges & opportunities to advancing the field

Research & Resource Development

Our community identifies the top priorities that are most critical to advancing the field and then, together, we conduct leading research to create clinical-quality resources on a tech timeline to drive progress.

Source: https://www.dimesociety.org/index.php/knowledge-center/dime-generated-content

But first, housekeeping

- Please note: **today's session is being recorded**
    - Slides and recording will be available on DiMe's webinar page after the session
- To ask a question for discussion during live Q&A, please either:
    - **'Raise your hand'** in the Reactions and the moderator will unmute you to ask your question live, or
    - **Type your question** into the chat box

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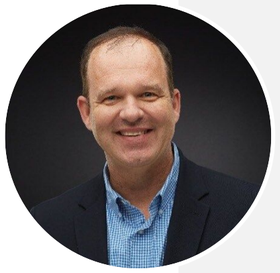

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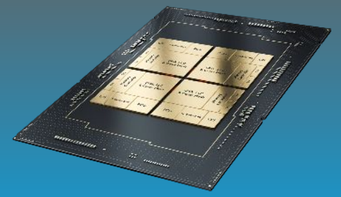
Increasing Software Innovation In Digital Health Products Through Unified Cross Architecture Programming

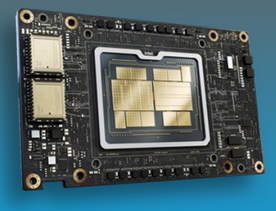
Modern Applications Demand Increased Processing

Diverse accelerators needed to meet today's performance requirements:
48% of developers target heterogeneous systems
that use more than one kind of processor or core[1]

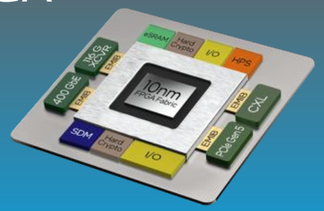
CPU



GPU



FPGA



Other Accelerators

Developer Challenges: Multiple Architectures, Vendors, and Programming Models

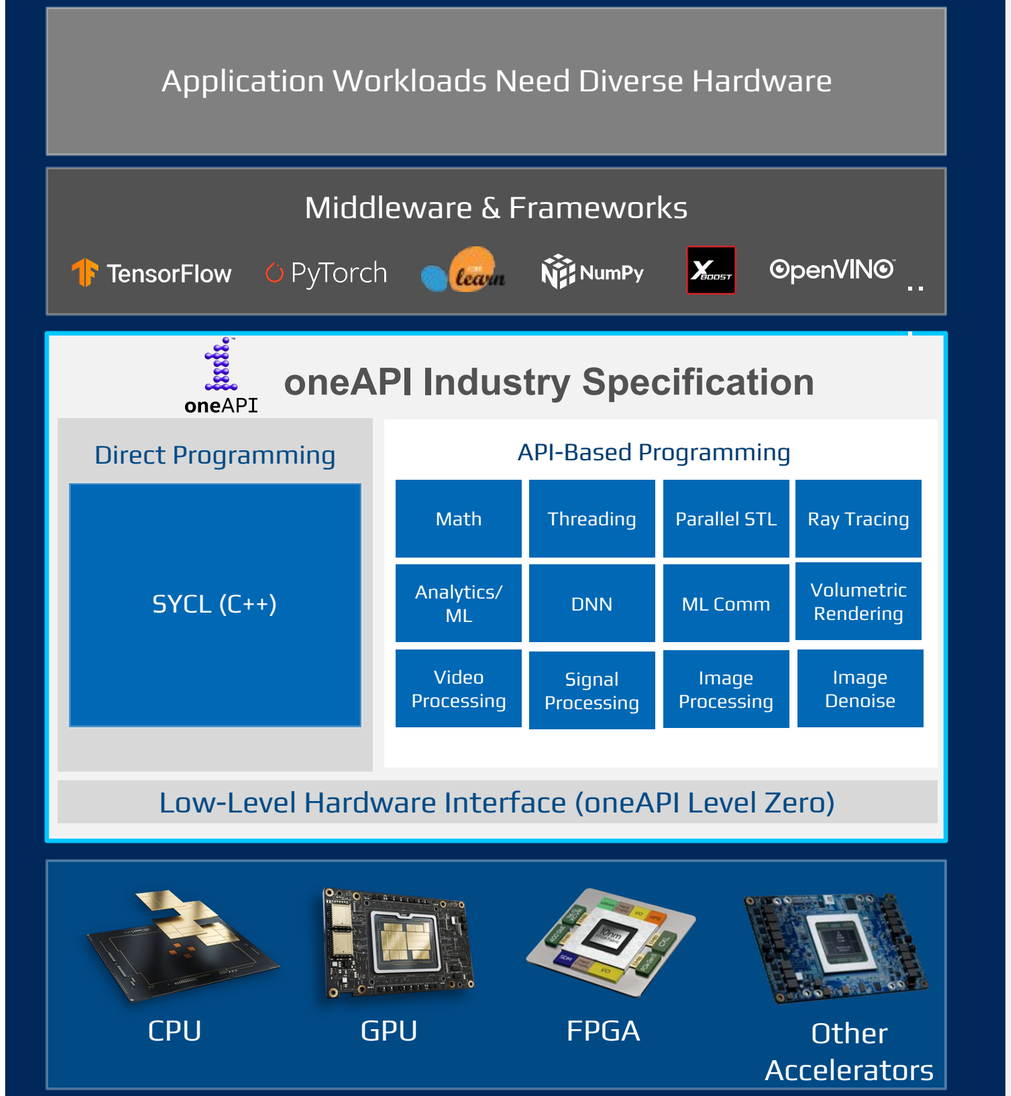
oneAPI

Open, Standards-based, Multiarchitecture Programming

1. Evans Data Global Development Survey Report 22.1, June 2022

Unified Cross Architecture Programming with oneAPI: An Industry Initiative

- Freedom to Make Your Best Choice
- Realize all the Hardware Value
- Develop & Deploy Software with Peace of Mind

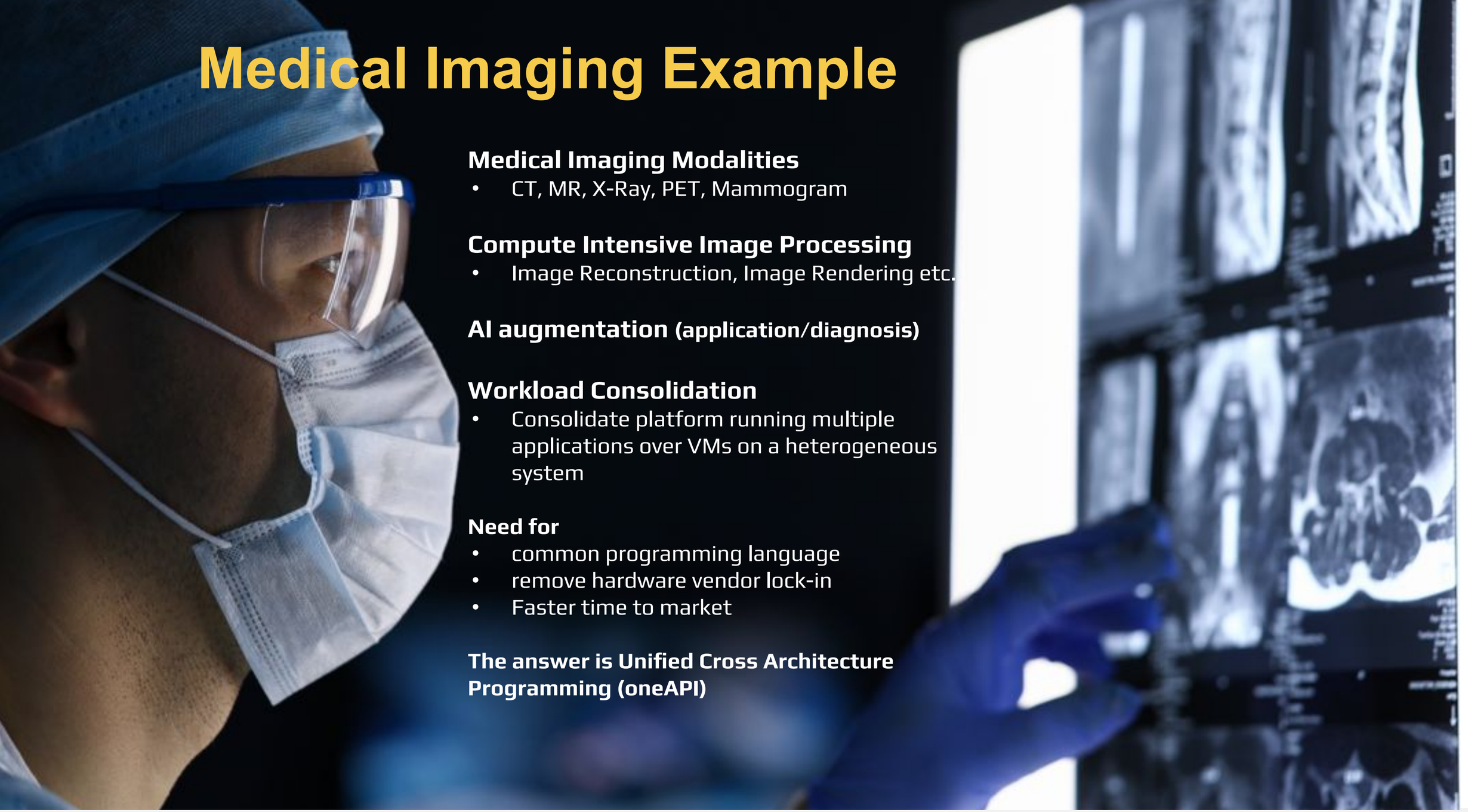


oneAPI

The productive, smart path to freedom for accelerated computing from the economic and technical burdens of proprietary programming models

Visit oneapi.com for more details

Medical Imaging Example



Medical Imaging Modalities
- CT, MR, X-Ray, PET, Mammogram

Compute Intensive Image Processing
- Image Reconstruction, Image Rendering etc.

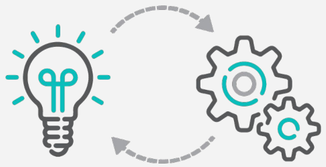
AI augmentation (application/diagnosis)

Workload Consolidation
- Consolidate platform running multiple applications over VMs on a heterogeneous system

Need for
- common programming language
- remove hardware vendor lock-in
- Faster time to market

The answer is Unified Cross Architecture Programming (oneAPI)

Resource in Action



Be a Part of the DiMe Community Resources in Action Hub

Tell us your DiMe “Resource in Action” story and we’ll feature it in our Resource in Action Hub!

DIGITAL MEDICINE SOCIETY

Submit to DiMe's Resource in Action Hub!

Source: https://www.dimesociety.org/community-building/case-study-hub/

Resources For You To Get Started

oneAPI :

Industry specification via oneapi.io

Github for Open source: github.com/oneapi-src

Code Migration:

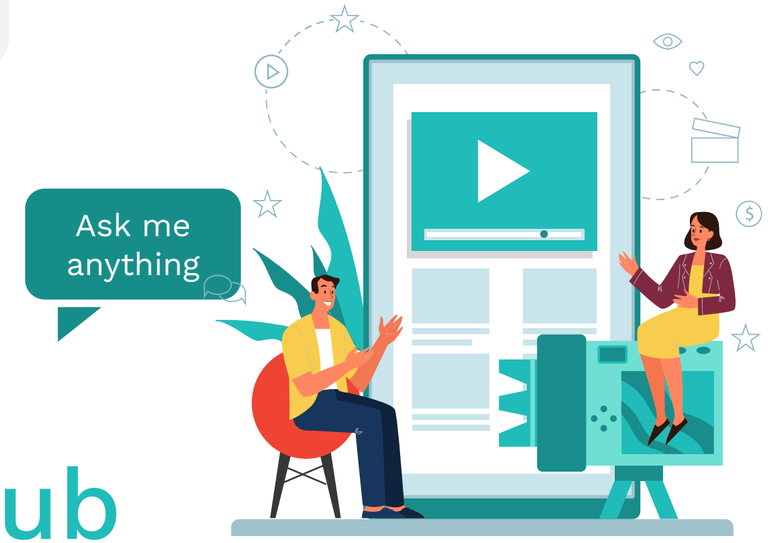
Whitepaper on oneAPI for Healthcare: C++ to DPC++ Migration Example

CUDA to DPC++ : Intel® DPC++ Compatibility Tool

Connect on LI:

Beenish Zia, David Blackman, Sarah Valentine

Virtual Journal club



Applicability of Artificial Intelligence in Healthcare in Resource-Poor Settings

Thursday, February 9th, 2023 12pm ET

Ashveena Gajeelee
Founder and CEO
Veritas Consortium, LLC

Mansa Shroff
Director of Business Development, Chief of Staff
WKD.SMRT

What are YOU doing to increase diversity in clinical trials?

Wednesday, February 15 at 11:00 AM (ET)

Register to Join

DIVERSITY, EQUITY, & INCLUSION in Digitized Clinical Trials

DIME DIGITAL MEDICINE SOCIETY

Kimberly Barnholt
Sr. Director & Evidence Generation Leader,
Genentech

Dyan Bryson
Assoc Director Clinical Ops
ICON plc

Ashish Chaturvedi
Founder & CEO
Althea.ai

Burgess Harrison
Executive Director,
National Minority Health Network

Shelli Pavone
CEO & Co-Founder
Inlightened

Reginald Swift
CEO, Co-Founder, CSO
Rubix LS

Pamela Tenaerts
Chief Scientific Officer
Medable, Inc

R'Kes Starling
Chief Executive Officer
Reveles Clinical Services

Ricki Fairley (Moderator)
CEO
Touch, The Black Breast Cancer Alliance

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DIGITAL MEDICINE SOCIETY

THANK YOU

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linkedin.com/company/dime-society