



MAGAZINE

ISSUE NO: 130

Apr 17, 2023

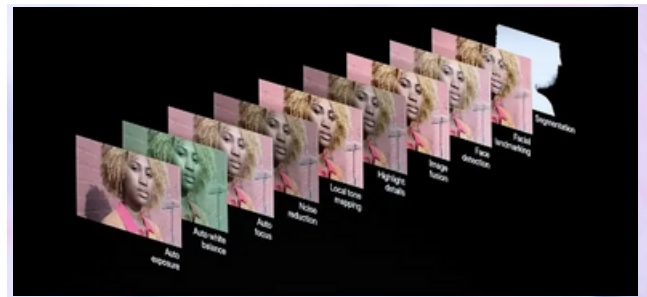
Department of

CSE

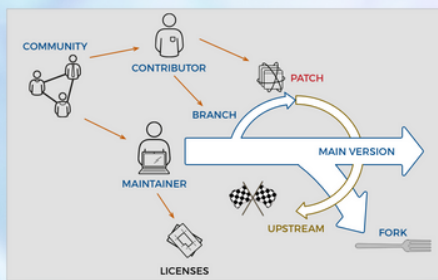
Byte Quest



HUMAN AUGMENTATION



COMPUTATIONAL PHOTOGRAPHY



OSSD



GRAPH DATABASES

Department Vision

To be a center for academic excellence in the field of Computer Science and Engineering education to enable graduates to be ethical and competent professionals.

FACULTY COORDINATORS

KOMAL KAUR
ASSISTANT PROFESSOR
DR. BHARGAVI PEDDIREDDY
ASSOCIATE PROFESSOR

Department Mission

To enable students to develop logic and problem solving approach that will help build their careers in the innovative field of computing and provide creative solutions for the benefit of society.

STUDENT COORDINATORS

TALLURI CHANDRA KIRAN (3/4) CSE C
AMOGHA KANDURI (3/4) CSE C



Byte Quest

HUMAN AUGMENTATION

Human augmentation is the term for technologies that improve human capabilities. They primarily work to elevate human performance, health or quality of life. Popular examples of human augmentation technology are devices such as cochlear implants or robotic limbs. However, human augmentation also applies to how humans and machines can work together, which we can see in the growing applications and capabilities of artificial intelligence (AI)



Human Augmentation works by enhancing human abilities through technology. Not only is human augmentation able to improve existing skills, but humans can also access new skills using technology.

- **Action.** Augmented actions focus on improving human's physical abilities. Technology advancements have allowed people to have more precise functions from their artificial limbs, with robotics playing a large role. Augmented action technology can also improve human capabilities.
- **Cognitive.** This looks at how computers and technology can assist the cognitive process. Augmented cognition technology aims to help improve decision-making, memory and attention.

OPEN SOURCE SOFTWARE DEVELOPMENT

Open-source software development (OSSD) is the process by which open-source software, or similar software whose source code is publicly available, is developed by an open-source software project. These are software products available with its source code under an open-source license to study, change, and improve its design. Examples of some popular open-source software products are Mozilla Firefox, Google.



Open-source software development can be divided into several phases. The phases specified here are derived from Sharma et al.[3] A diagram displaying the process-data structure of open-source software development is shown on the right. In this picture, the phases of open-source software development are displayed, along with the corresponding data elements. This diagram is made using the meta-modeling and meta-process modeling techniques. It's a common mistake to start a project when contributing to an existing similar project would be more effective (NIH syndrome)[citation needed]. To start a successful project it is very important to investigate what's already there.



Byte Quest

COMPUTATIONAL PHOTOGRAPHY

Computational photography refers to digital image capture and processing techniques that use digital computation instead of optical processes. Computational photography can improve the capabilities of a camera, or introduce features that were not possible at all with film-based photography,

DSLR	FANCY MODERN SMARTPHONE
	
✓ EXCELLENT SENSOR	✗ TINY SLOW LENS
✓ HUGE FAST LENS	✗ SENSOR SMALLER THAN THE HEAD OF A MATCH
✗ HORRIBLE CPU	✓ ELECTRONIC SHUTTER
✗ HARDWARE «WHAT'S LEFT FROM SONY»	✓ 128-CORE CPU (X3)
✗ NO SOFTWARE	✓ THE WHOLE WORLD WRITING SOFTWARE
✗ \$25 SIGN UP FOR MY ONLINE PHOTOGRAPHY COURSE!!!	

Examples of computational photography include in-camera computation of digital panoramas,[6] high-dynamic-range images, and light field cameras. Light field cameras use novel optical elements to capture three-dimensional scene information which can then be used to produce 3D images, enhanced depth-of-field, and selective de-focusing (or "post focus"). Enhanced depth-of-field reduces the need for mechanical focusing systems. All of these features use computational imaging techniques.

The definition of computational photography has evolved to cover a number of subject areas in computer graphics, computer vision, and applied optics. These areas are given below, organized according to a taxonomy proposed by Shree K. Nayar[citation needed]. Within each area is a list of techniques, and for each technique, one or two representative papers or books are cited. Deliberately omitted from the taxonomy are image processing (see also digital image processing) techniques applied to traditionally captured images in order to produce better images.

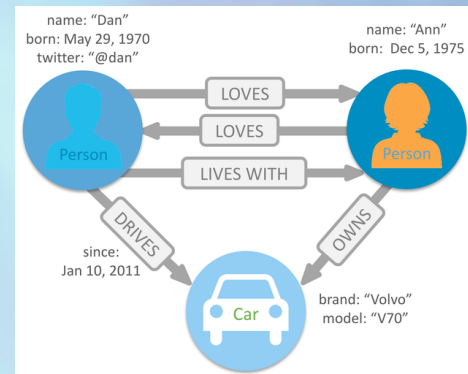
Photos taken using computational photography can allow amateurs to produce photographs rivaling the quality of professional photographers, but as of 2019 do not outperform the use of professional-level equipment.[7]



Byte Quest

GRAPH DATABASES

A graph database is a systematic collection of data that emphasizes the relationships between the different data entities. The NoSQL database uses mathematical graph theory to show data connections.



Graph databases are capable of sophisticated fraud prevention. For example, you can use relationships in graph databases to process financial transactions in near-real time. With fast graph queries, you can detect that a potential purchaser is using the same email address and credit card included in a known fraud case. Graph databases can also help you detect fraud through relationship patterns, such as multiple people associated with a personal email address or multiple people sharing the same IP address but residing in different physical locations. The graph model is a good choice for applications that provide recommendations. You can store graph relationships between information categories such as customer interests, friends, and purchase history. You can use a highly available graph database to make product recommendations to a user based on which products are purchased by others who have similar interests and purchase histories.

BROUGHT TO YOU BY



**Department of
Computer Science and Engineering**

Vasavi College of Engineering