



Improved MRI imaging

OTT ID # 1188

Applications

Dynamic and functional imaging, such as cardiac imaging, and dynamic contrast-enhanced (DCE) imaging, especially in three-dimensional imaging.

Target Problems

This invention addresses the long-standing issue of low imaging speed in MRI by utilizing the complementary benefits of compressed sensing and parallel imaging.

Key Features

- **Faster** – The invention achieves at least 4x acquisition speed.
- **Better quality** – The images will have higher resolution.
- **Lasting market** – MRI will continue to play an import role in non-invasive diagnosis.
- **Larger market** – The invention will likely create a larger market of MRI due to improved speed.
- **Ease to Implement** – can employ the existing data acquisition sequences.

Technology

Inventors at University of Wisconsin, Milwaukee (UWM) have developed magnetic resonance imaging (MRI) has revolutionized radiology for the last three decades because of its unique capabilities for structural, physiological, and functional imaging. However, its applications are still rather limited due to its relatively low imaging speeds. This invention combines compressed sensing, a new theoretical framework for signal recovery with very few samples, and parallel imaging, an emerging fast imaging technology using phased array coil, to achieve a significant reduction in data acquisition time.

Intellectual Property

[US8587307B2](#)

About the Inventor(s)

[Lei Ying](#) was an Assistant Professor in the Department of Electrical Engineering and Computer Science at University of Wisconsin – Milwaukee from 2003-2012. She is now a Professor at the University at Buffalo, The State University of New York in the Department of Biomedical Engineering and Director of Graduate Studies in the Department of Electrical Engineering.

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