

## POLYHEDRA: A SOLID LOVE FOR MATHEMATICS

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### ABSTRACT

Polyhedra are solid figures bounded by plane faces. We talk about a special class of polyhedra in which the faces are regular polygons and the arrangement of polygons around each vertex is identical. Speaker talks about his childhood passion on polyhedra, which was initiated by Wesak Lanterns. Polyhedra contributed heavily on his interest in mathematics. He rediscovered Platonic and Archimedean polyhedra and his closed-form equations allowed him to calculate the radii of the escribed spheres and other geometric properties of those polyhedra. Finally he will be talking about the possible 3D tessellations using this class of polyhedra and will give a brief introduction to polyhedra that does not belong to the above class.



### SPEAKER

Udaya Jayatilake had his elementary education from Vidyadana Maha Vidyalaya, Kottawa and President's College, Maharagama. He entered Royal College, Colombo on his year five scholarship exam results. He was selected for University of Moratuwa and studied Electronics and Telecommunication Engineering. After receiving his bachelor's degree in Engineering in 2004, he joined the Department of Mathematics at the same university. He finished his MSc degree in Mathematics in 2006 and joined the permanent academic staff in the same year. In 2009 he got a PhD placement at the Texas Tech University, Lubbock, Texas. He worked on the Brannan's conjecture with Prof. Alexander Solynin and Prof. Roger Barnard and received his MS in 2010 and PhD in 2013. He made the best progress on the conjecture since its introduction in 1973, verifying and proving some of his own conjectures on the topic. His Erdős Number is 3.

#### Publications/Conferences

1. Udaya C. Jayatilake, *Calculations on Face and Vertex Regular Polyhedra*. The Mathematical Gazette 89 (2005), no. 514, 76-81.
2. Udaya C. Jayatilake, *Face and Vertex Regular Polyhedra*, 9.05 television program, Sri Lanka Rupavahini Corporation, 1999. <https://www.youtube.com/watch?v=SGZDGeXwstU>
3. Udaya Jayatilake and Saba Nafees, *Making Polyhedra: a Hands-on Experience*, MOVES Conference, Museum of Mathematics, New York, June 2013.

# Mtalk-A Monthly Public Talk

## What

- Is a monthly public talk at University of Moratuwa, held on the second Thursday of every month, 10.15-11.15 at NA1.

## Why

- Create an interest in Mathematics/Science/Technology.
- Enhance the knowledge of the audience.
- Promote research/innovations.
- Set a stage for university students/staff to showcase their achievements.
- Set a stage for outsiders to showcase their achievements.
- Finding/drafting solutions to problems of national interest.

## How

- The Mathematics Society-MSoc of UoM will be organizing the event.
- All announcements will be available on Mtalk FB page.
- There will be two organizers for each talk, they shall be appointed by and make administrators of the FB page by their predecessors.
- They will be inviting the speaker and will be preparing a poster with the Abstract and a brief introduction of the speaker. That shall be displayed at the university and posted on the FB page before the talk.
- The organizers will be introducing the speakers on the stage.
- The talk shall be video recorded and available on YouTube and link posted on FB page after each talk.
- The two main organizers will automatically become members of the MSoc.